



<i>For CSM Use Only</i>	
Filing Date:	RECEIVED June 30, 2023 <i>Commission on State Mandates</i>
TC #:	22-TC-07

TEST CLAIM FORM AND TEST CLAIM AMENDMENT FORM (Pursuant to Government Code section 17500 et seq. and Title 2, California Code of Regulations, section 1181.1 et seq.)

Section 1

Proposed Test Claim Title:

Municipal Regional Stormwater Permit

Section 2

Local Government (Local Agency/School District) Name:

City of Union City

Name and Title of Claimant's Authorized Official pursuant to [CCR, tit.2, § 1183.1\(a\)\(1-5\)](#):

Joan Malloy, City Manager

Street Address, City, State, and Zip:

34009 Alvarado-Niles Road, Union City, CA 94587

Telephone Number

(510) 675-5344

Email Address

joanm@unioncity.org

Section 3 – Claimant designates the following person to act as its sole representative in this test claim. All correspondence and communications regarding this claim shall be sent to this representative. Any change in representation must be authorized by the claimant in writing, and e-filed with the Commission on State Mandates. ([CCR, tit.2, § 1183.1\(b\)\(1-5\)](#).)

Name and Title of Claimant Representative:

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Organization: Meyers Nave

Street Address, City, State, Zip:

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Telephone Number

(213) 626-2906

Email Address

gnewmark@meyersnave.com

Section 4 – Identify all code sections (include statutes, chapters, and bill numbers; e.g., Penal Code section 2045, Statutes 2004, Chapter 54 [AB 290]), regulatory sections (include register number and effective date; e.g., California Code of Regulations, title 5, section 60100 (Register 1998, No. 44, effective 10/29/98), and other executive orders (include effective date) that impose the alleged mandate pursuant to [Government Code section 17553](#) and check for amendments to the section or regulations adopted to implement it:

California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit; Order No. R2-2022-0018, as modified by Order No. R2-2023-0019; NPDES Permit No. CAS612008; issued May 11, 2022; effective date July 1, 2022; MRP3 Provisions C.3.b.ii.(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b

- Test Claim is Timely Filed on [Insert Filing Date] [select either A or B]: 06 / 30 / 2023
- A: Which is not later than 12 months (365 days) following [insert effective date] 07 / 01 / 2022, the effective date of the statute(s) or executive order(s) pled; or
- B: Which is within 12 months (365 days) of [insert the date costs were *first* incurred to implement the alleged mandate] / / , which is the date of first incurring costs as a result of the statute(s) or executive order(s) pled. *This filing includes evidence which would be admissible over an objection in a civil proceeding to support the assertion of fact regarding the date that costs were first incurred.*

([Gov. Code § 17551\(c\)](#); [Cal. Code Regs., tit. 2, §§ 1183.1\(c\)](#) and [1187.5.](#))

Section 5 – Written Narrative:

- Includes a statement that actual or estimated costs exceed one thousand dollars (\$1,000). ([Gov. Code § 17564.](#))
- Includes all of the following elements for each statute or executive order alleged **pursuant to [Government Code section 17553\(b\)\(1\)](#)**:
- Identifies all sections of statutes or executive orders and the effective date and register number of regulations alleged to contain a mandate, including a detailed description of the *new* activities and costs that arise from the alleged mandate and the existing activities and costs that are *modified* by the alleged mandate;
- Identifies *actual* increased costs incurred by the claimant during the fiscal year for which the claim was filed to implement the alleged mandate;
- Identifies *actual or estimated* annual costs that will be incurred by the claimant to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed;
- Contains a statewide cost estimate of increased costs that all local agencies or school districts will incur to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed;

Following FY: 2023 - 2024 Total Costs: \$68,200,880

Identifies all dedicated funding sources for this program;

State: None

Federal: None

Local agency's general purpose funds: General Fund and Clean Water Fund

Other nonlocal agency funds: None

Fee authority to offset costs: None

Identifies prior mandate determinations made by the Board of Control or the Commission on State Mandates that may be related to the alleged mandate: _____

7/31/09 Statement of Decision in Test Claim Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21; 3/26/10 Statement of Decision in Test Claim No. 07-TC-09; and the Commission's 3/24/23 adoption of the proposed decision regarding Test Claim 09-TC-03

Identifies any legislatively determined mandates that are on, or that may be related to, the same statute or executive order: None

Section 6 – The Written Narrative Shall be Supported with Declarations Under Penalty of Perjury Pursuant to [Government Code Section 17553\(b\)\(2\)](#) and [California Code of Regulations, title 2, section 1187.5](#), as follows:

Declarations of actual or estimated increased costs that will be incurred by the claimant to implement the alleged mandate.

Declarations identifying all local, state, or federal funds, and fee authority that may be used to offset the increased costs that will be incurred by the claimant to implement the alleged mandate, including direct and indirect costs.

Declarations describing new activities performed to implement specified provisions of the new statute or executive order alleged to impose a reimbursable state-mandated program (specific references shall be made to chapters, articles, sections, or page numbers alleged to impose a reimbursable state-mandated program).

If applicable, declarations describing the period of reimbursement and payments received for full reimbursement of costs for a legislatively determined mandate pursuant to [Government Code section 17573](#), and the authority to file a test claim pursuant to paragraph (1) of subdivision (c) of [Government Code section 17574](#).

The declarations are signed under penalty of perjury, based on the declarant's personal knowledge, information, or belief, by persons who are authorized and competent to do so.

Section 7 – The Written Narrative Shall be Supported with Copies of the Following Documentation Pursuant to [Government Code section 17553\(b\)\(3\)](#) and [California Code of Regulations, title 2, § 1187.5](#):

The test claim statute that includes the bill number, and/or executive order identified by its effective date and register number (if a regulation), alleged to impose or impact a mandate.
Pages PDF 536 to PDF 1524 (all pages below are to PDF).

Relevant portions of state constitutional provisions, federal statutes, and executive orders that may impact the alleged mandate. Pages 2166 to 2282.

- Administrative decisions and court decisions cited in the narrative. (Published court decisions arising from a state mandate determination by the Board of Control or the Commission are exempt from this requirement.) Pages 2284 to 2383.
- Evidence to support any written representation of fact. *Hearsay evidence may be used for the purpose of supplementing or explaining other evidence but shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions. (Cal. Code Regs., tit. 2, § 1187.5.)* Pages 39 to 533.

Section 8 – TEST CLAIM CERTIFICATION Pursuant to [Government Code section 17553](#)

- The test claim form is signed and dated at the end of the document, under penalty of perjury by the eligible claimant, with the declaration that the test claim is true and complete to the best of the declarant's personal knowledge, information, or belief.

Read, sign, and date this section. Test claims that are not signed by authorized claimant officials pursuant to [California Code of Regulations, title 2, section 1183.1\(a\)\(1-5\)](#) will be returned as incomplete. In addition, please note that this form also serves to designate a claimant representative for the matter (if desired) and for that reason may only be signed by an authorized local government official as defined in [section 1183.1\(a\)\(1-5\)](#) of the Commission’s regulations, and not by the representative.

This test claim alleges the existence of a reimbursable state-mandated program within the meaning of [article XIII B, section 6 of the California Constitution](#) and [Government Code section 17514](#). I hereby declare, under penalty of perjury under the laws of the State of California, that the information in this test claim is true and complete to the best of my own personal knowledge, information, or belief. All representations of fact are supported by documentary or testimonial evidence and are submitted in accordance with the Commission’s regulations. ([Cal. Code Regs., tit.2, §§ 1183.1 and 1187.5.](#))

Joan Malloy

Name of Authorized Local Government Official
 pursuant to [Cal. Code Regs., tit.2, § 1183.1\(a\)\(1-5\)](#)

City Manager

Print or Type Title

Joan Malloy
 Joan Malloy (May 22, 2024 12:47 PDT)

Signature of Authorized Local Government Official
 pursuant to [Cal. Code Regs., tit.2, § 1183.1\(a\)\(1-5\)](#)

Test Claim Form

Final Audit Report

2024-05-22

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UNION CITY TEST CLAIM

IN RE

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
MUNICIPAL REGIONAL STORMWATER NPDES PERMIT**

**ORDER NO. R2-2022-0018
AS MODIFIED BY ORDER NO. R2-2023-0019
NPDES PERMIT NO. CAS612008
MAY 11, 2022**

5. WRITTEN NARRATIVE

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
MUNICIPAL REGIONAL STORMWATER NPDES PERMIT**

**ORDER NO. R2-2022-0018
AS MODIFIED BY ORDER NO. R2-2023-0019
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MAY 11, 2022**

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NARRATIVE STATEMENT IN SUPPORT OF TEST CLAIM

I. INTRODUCTION

The City of Union City (“City” or “Union City”) seeks the Commission on State Mandate’s (“Commission”) approval of claims to recover costs associated with obligations mandated by several provisions of the Municipal Regional Stormwater Permit issued on May 11, 2022, (“MRP3”) by the California Regional Water Quality Control Board, San Francisco Bay Region (“Regional Water Board”), effective July 1, 2022, and amended in October 2023 by Order No. R2-2023-0019.¹ The MRP3 regulates the discharge of stormwater runoff from the municipal separate storm sewer systems (“MS4s”) maintained by a total of 79 cities, counties, and flood control districts within the jurisdiction of six Bay Area regional stormwater programs.

The Test Claim cures the Test Claim filed by Union City on June 30, 2023 and is responsive to the Commission’s February 23, 2024, Second Notice of Duplicate and Incomplete Test Claim.

This Test Claim addresses several broad categories of new mandates imposed by the MRP3:

- Union City seeks reimbursement for costly MRP3 requirements to achieve greater levels of trash load reduction than previously required. Under the MRP3, the state mandates that the City achieve a 100% trash load reduction or no adverse impact to receiving waters from trash by June 30, 2025. Also, for the first time, the state requires control of trash from private lands.

¹ A copy of the MRP3 is attached to Section 7 as Exhibit 1; an “unofficial version” of the MRP3, as modified, is attached to Section 7 as Exhibit 2. This version states: “**Important Note:** The current permit, MRP 3, comprises Order Nos. R2-2022-0018 and R2-2023-0019. The following is an unofficial version of MRP 3 (without the Fact Sheet and other Attachments) that incorporates amendments to MRP 3 adopted in October 2023, and that has been compiled for convenience purposes only. Please refer to the adopted orders for a complete and accurate copy of MRP 3. In the event of a conflict between the adopted orders and this unofficial version of MRP 3, the adopted orders shall control.” (Section 7, Ex. 2 at S7-0727) None of the provisions of the MRP3 at issue in this Test Claim are affected by the October 2023 modifications.

- The City seeks reimbursement for costly mercury and PCB control programs, including the implementation of treatment control measures to treat old industrial land use at 70% efficiency. The MRP3 also now requires Permittees to quantify the PCBs load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures.
- Permittees are required to implement low impact development (“LID”) source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility for certain road projects.
- The permit requires additional “green infrastructure” retrofits and requires Permittees to update their Green Infrastructure Plans as needed to ensure that municipal processes and ordinances allow and appropriately encourage implementation of green infrastructure.
- The MRP3 requires Permittees to collectively convene a regionwide Firefighting Discharges Working Group to reduce the impacts of emergency discharges to the MS4 associated with firefighting.
- The MRP3 requires Permittees to develop and submit a best management practice report that identifies effective practices to address discharges associated with unsheltered homeless populations.
- Permittees must develop a cost reporting framework and methodology to perform an annual fiscal analysis and develop an asset management plan.
- Additional costly water monitoring requirements, including the collection and analysis of the amount of trash discharged from MS4 outfalls and the implementation of a trash monitoring pilot program, monitoring of low impact development (“LID”) controls and monitoring pollutants of concern.
- Finally, and as a precaution, Union City seeks reimbursement for trash control, green infrastructure and monitoring requirement costs the MRP3 continues from the prior permits. These requirements were initially imposed in the prior permits, MRP2 and MRP1,² and are pending before the Commission in Test Claim 16-

² Prior to the effective date of the MRP3, Permittees were regulated by NPDES No. CAS612008, issued as Order No. R2-2015-0049 (November 19, 2015) (“MRP2”), which is attached to Section 7 as Exhibit 3. Prior to the effective date of the MRP2, Union City was regulated by Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009,

TC-03 and Consolidated Test Claims 10-TC-02, 10-TC-03 and 10-TC-05. The City does not believe it is or should be required to raise those same issues in this Test Claim, but does so in an abundance of caution.

On March 24, 2023, the Commission heard a municipal stormwater Test Claim 09-TC-03 involving Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2009-0030, and on that date adopted a decision finding the permit terms in the MS4 permit at issue were not federal mandates. This is in line with the California Supreme Court in *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749 (“*Dep’t of Finance I*”). The High Court upheld the Commission’s determination that the challenged storm water provisions are state mandates rather than federal mandates. In addition, the Supreme Court clarified that opponents of the test claim, not the claimant, bear the burden of proving the applicability of any exceptions to the “general rule requiring reimbursement of all state-mandated costs.” (*Id.* at 769.)

Further, under existing law and Supreme Court authority, the new activities and increased services Union City must undertake to comply with the MRP3 are state mandates subject to subvention. The City respectfully requests that the Commission approve this Test Claim so that the MRP3 mandates are effectively funded and the City can continue its cooperation and collaboration with the Regional Water Board to improve water quality in the San Francisco Bay region with the necessary funding. Union City is committed to the improvement and maintenance of the quality of waters of the Bay and its tributaries, and will comply with the MRP3 to the best of its ability. Further, the City supports the objectives that the MRP3 is intended to achieve. The City submits this Test Claim only to address the fundamental issue of the limited financial ability of the City and its taxpayers to pay for the necessary activities to accomplish the objectives of the MRP3.

amended by Order No. R2-2011-0083 on November 28, 2011 (“MRP1”), a copy of which is attached to Section 7 as Exhibit 4.

II. LEGAL AND PROCEDURAL BACKGROUND

A. Regional Stormwater Permits

When a Regional Water Board issues a stormwater permit, it is implementing both federal and state law:

Part of the federal Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), “[t]he primary means” for enforcing effluent limitations and standards under the Clean Water Act. (*Arkansas v. Oklahoma, supra*, 503 U.S. at 101, 112 S.Ct. 1046.) The NPDES sets out the conditions under which the federal EPA or a state with an approved water quality control program can issue permits for the discharge of pollutants in wastewater. (33 U.S.C. § 1342(a) & (b).) In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits required by federal law. (§ 13374.)

(*City of Burbank v. State Water Res. Control Bd.* (2005) 35 Cal.4th 613 at 619-621.) Section 402(p) of the federal Clean Water Act establishes that an MS4 permit:

- (i) may be issued on a system or jurisdiction-wide basis;
- (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and
- (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

(33 U.S.C. § 1342(p)(3)(B).)³

California is among the states that are authorized to implement the NPDES permit program. (33 U.S.C. § 1342(b).) Permits issued by the regional water boards under this authority must impose conditions that are at least as stringent as those required under the federal act. (33 U.S.C. § 1371; Cal. Water Code § 13377.)

However, relying on its state law authority or discretion, the regional water boards are free to issue permits that impose limits or conditions in excess of those required under the federal law where necessary to achieve higher water quality standards and objectives established under state law:

In California, the controlling law is the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), which was enacted in 1969. Its goal is “to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.” The task of accomplishing this belongs to the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards; together the State Board and the regional boards comprise “the principal state agencies with primary responsibility for the coordination and control of water quality.”

Whereas the State Board establishes statewide policy for water quality control, the regional boards “formulate and adopt water quality control plans for all areas within [a] region.” The regional boards’ water quality plans, called “basin plans,” must address the beneficial uses to be protected as well as water quality objectives, and they must establish a program of implementation. Basin plans must be consistent with “state policy for water quality control.”

(City of Burbank v. State Water Res. Control Bd. (2005) 35 Cal.4th 613 at 619 (internal citations omitted).) The California Water Code

³ The relevant provisions of the Clean Water Act are included with the documentation in Section 7, Exhibit 4, of this Test Claim.

expressly anticipates that the uses and objectives set forth in basin plans and the need to prevent nuisance will require permits issued by regional water boards to impose more stringent regulatory controls than would otherwise result from federal law:

Notwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.

(Cal. Water Code § 13377.)

B. MRP3 and the MRP2 (the Prior Permit)

The MRP3 was issued by the Regional Water Board, an executive agency of the State of California. It governs stormwater discharges in some 79 different municipal entities (e.g., cities, counties, and flood control and water conservation districts). (Section 7, Ex. 1 at S7-00002.) Union City is one of the Permittees participating in the Alameda Countywide Clean Water Program (the “Alameda Countywide Program” or “Program”). Union City was formerly governed by the MRP2. (Section 7, Ex. 3.) For purposes of establishing that the provisions of the MRP3 constitute new programs, the MRP3’s provisions are compared to the MRP2.

Additionally, this Test Claim also includes the continuation of MRP3 Provisions C.8 (water monitoring), C.10.b (trash reduction) and C.11.a. C.11.e, C.12.f and C.12.h (green infrastructure) that were first imposed in the MRP1 and MRP2 and maintained as requirements in the MRP3. These provisions are pending before the Commission in Consolidated Test Claims 10-TC-02, 10-TC-03 and 10-TC-05 and Test Claim 16-TC-03, respectively.

C. State Mandate Law

The Commission is familiar with the basic legal framework that governs its consideration of test claims. Union City will, therefore, provide only a brief summary of the major legal principles. Article XIII B section 6 of the California Constitution provides in relevant part:

Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local governments for the cost of the program or increased level of service....

The purpose of section 6 “is to preclude the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are ‘ill equipped’ to assume increased financial responsibilities because of the taxing and spending limitations that articles XIII A and XIII B impose.” (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487.) The section “was designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues.” (*County of Fresno, supra*, at 487; *Redevelopment Agency v. Comm’n on State Mandates* (1997) 55 Cal.App.4th 976, 984-85.) The Legislature implemented section 6 by enacting a comprehensive administrative scheme to establish and pay mandate claims. (Cal. Gov’t Code §§ 17500 *et seq.*; *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 331, 333 [statute establishes “procedure by which to implement and enforce section 6”].)

The California Supreme Court in *Dep’t of Finance I* summarized the basic principle that governs the issues raised in this Test Claim: “Under our state Constitution, if the Legislature or a state agency requires a local government to provide a new program or higher level of service, the local government is entitled to reimbursement from the state for the associated costs.” (1 Cal.5th at 754.)

1. Parties Opposing Union City Bear the Burden of Proving Exceptions to the General Constitutional Subvention Requirement

For the purposes of future test claim proceedings, one of the most important aspects of *Dep’t of Finance I* is the Court’s discussion of the

burdens of proof of the parties before the Commission. Under *Dep't of Finance I*, once claimants demonstrate new programs or increased levels of service are being imposed, the burden of proof shifts to test claim opponents (such as the Regional Water Board), if any appear, to prove that the requirements at issue are excepted from the general subvention requirement:

Section 6 establishes a **general rule requiring reimbursement** of all state-mandated costs. Government Code section 17556, subdivision (c), codifies an exception to that rule. Typically, **the party claiming the applicability of an exception bears the burden of demonstrating that it applies.** [Citations.] Here, the State must explain why federal law mandated these requirements, rather than forcing the Operators to prove the opposite.

(*Dep't of Finance I*, 1 Cal.5th at 769, citing *Simpson Strong-Tie Co., Inc. v. Gore* (2010) 49 Cal.4th 12, 23 and *Long Beach Police Officers Assn. v. City of Long Beach* (2014) 59 Cal.4th 59, 67, emphasis added.) Thus, for Union City's test claim, the City must establish that the MRP3 requires new programs and/or higher levels of service, but the applicability of any exceptions to the "general rule requirement reimbursement" must be proven, if at all, by a test claim opponent.

Moreover, the Supreme Court's reasoning regarding the federal mandates exception must apply with equal force to all the "exception[s] to that [general] rule" listed in Government Code section 17556, not just the federal mandates exception in subdivision (c). For example, to the extent the Regional Water Board contends that the fee authority exception in section 17556, subdivision (d), is applicable to Union City's test claim, the Regional Water Board bears the burden of proving the exception applies and Union City cannot be forced to "prove the opposite."

2. **Statutory Exceptions to the General Rule Requiring Subvention Must Be Construed Narrowly and the Constitution Must Be Construed Broadly**

Furthermore, in evaluating the applicability of statutory exceptions to the constitutional "general rule," the Commission must

construe the exceptions narrowly. (*National City v. Fritz* (1949) 33 Cal.2d 635, 636–37 (applying “the rule that exceptions in a statute are to be strictly construed ... [citations].”); *Dept. of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Board* (2017) 7 Cal.App.5th 628, 641 (applying the “well-established rule that [a]n exception to a statute is to be narrowly construed,” internal quotations and citations omitted); *Corey v. Knight* (1957) 150 Cal.App.2d 671, 680 (statutory “exceptions are to be narrowly, not broadly, construed”).) Accordingly, when considering anticipated arguments from the Regional Water Board about the applicability of section 17556 exceptions, only narrow interpretations of the exceptions are permissible and appropriate.

The rule requiring narrow construction of statutory exceptions dovetails with the principle that ballot initiatives amending the Constitution must be interpreted broadly to implement the will of the voters. The exceptions listed in section 17556 do not appear anywhere in Article XIII B, section 6. As the court in *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564 observed, “[t]he constitutional subvention provision and the statutory provisions which preceded it do not expressly say that the state is not required to provide a subvention for costs imposed by a federal mandate.” (*Id.* at p. 1593.)⁴ Rather, these exceptions were developed by the legislature and the courts rather than the voters.

In interpreting the scope of exceptions to the general rule requiring subvention, the corollary rule is that the Constitution “is not to be interpreted according to narrow or supertechnical principles, but liberally and on broad general lines, so that it may accomplish in full measure the objects of its establishment and so carry out the great principles of government.” (*Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal. 3d 208, 244-45, quoting *Stephens v. Chambers* (1917) 34 Cal.App. 660, 663-664.) In light of the objectives of Proposition 4, the plain language of the Constitution

⁴ Article XIII B, section 9, mentions federal mandates as excluded from definition of “appropriations subject to limitation,” but they are not mentioned in section 6. The Supreme Court declined to address the “question whether ‘federal’ and ‘state’ mandates are mutually exclusive for purposes of state subvention” in *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 71, fn. 16.

requiring subvention whenever the state imposes new programs or higher levels of service must be broadly construed.

3. **The Federal Mandates Exception Does Not Apply to the Challenged Requirements Because the Regional Water Board Exercised its Discretion by Virtue of a “True Choice”**

In *Dep’t of Finance I*, the Supreme Court also confirmed that application of the federal mandates exception turns on whether a state requirement was imposed because it was compelled by federal law, or whether it was “imposed as a result of the state’s discretionary action.” (1 Cal.5th at 754.) If it is compelled by federal law, the state must implement a federal mandate and no reimbursement is required. On the other hand, if the requirement is imposed as a result of the state’s discretionary action, reimbursement is required.

The Supreme Court summarized applicable case law on the matter, and opined that, “if federal law gives the state discretion whether to impose a particular implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a ‘true choice,’ the requirement is not federally mandated” and reimbursement is required. (*Dep’t of Finance I*, 1 Cal.5th at 765.) In applying this rule to the County of Los Angeles claims in that case, the Court analyzed the Clean Water Act, the Porter-Cologne Act, and related regulations. The Court found that the regional board in that case was given discretionary power to fashion requirements which it determined would meet the Clean Water Act’s maximum extent practicable (“MEP”) standard. (*Id.* at 767-68.) Federal law did not compel these requirements, because the State’s NPDES program is undertaken on a voluntary basis. (*Id.* at 767.) As the Court noted, the State was not compelled to operate its own permitting system. (*Id.*) The Supreme Court further found that the federal regulations gave the regional board discretion to develop and issue municipal storm water permits and determine which specific controls would be required. (*Id.* at 767-68.) Accordingly, the regional board’s exercise of a “true choice” in developing the County of Los Angeles permit conditions at issue constituted a state mandate with respect to the contested permit provisions. (*Id.* at 769, 770-72 [analyzing whether inspection and trash receptacle conditions were mandated by CWA].) Accordingly, none of the four permit conditions at issue in *Dept. of Finance I* were found to be federal mandates.

The Third Appellate District’s subsequent 2017 decision in *Dept. of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661 (*Dept. of Finance II*), involved ten permit requirements in San Diego County’s MS4 permit stemming from the federal CWA’s MEP and water quality standard requirements relating to street sweeping and cleaning stormwater conveyances, a hydromodification plan, low impact development practices, education programs, urban runoff management programs, effectiveness assessments and permittee collaboration. The court “follow[ed] the analytical regime established by [the Supreme Court in *Dept. of Finance I*],” and found that “[n]o federal law, regulation, or administrative [or] case authority expressly required” any of these ten permit requirements:

Under the test announced in [*Dept. of Finance I*], we conclude federal law did not compel imposition of the permit requirements, and they are subject to subvention under section 6. This is because the requirement to reduce pollutants to the “maximum extent practicable” was not a federal mandate for purposes of section 6. Rather, it vested the San Diego Regional Board with discretion to choose how the permittees must meet that standard, and the exercise of that discretion resulted in imposing a state mandate. We also find no federal law, regulation, or administrative [or] case authority that, under the test provided by [*Dept. of Finance I*], expressly required the conditions the San Diego Regional Board imposed.

(18 Cal.App.5th at 676; see also *id.* at 667.) Describing the Supreme Court’s decision, the court states that the MEP standard “by its nature is discretionary and does not by itself impose a federal mandate for purposes of section 6.” (*Id.* at 681.) Furthermore, “[t]he high court stated that, to be a federal mandate for purposes of section 6, the federal law or regulation must ‘expressly’ or ‘explicitly’ require the specific condition imposed in the permit.” (*Id.* at 682.)

On March 24, 2023, the Commission heard a municipal stormwater Test Claim 09-TC-03 involving *Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2009-0030*, and on that date adopted a decision finding that none of the conditions at issue in that test claim are federal mandates.

Thus, **none** of the MS4 permit provisions at issue in *Dept. of Finance I*, *Dept. of Finance II* or the Commission’s decision regarding Test Claim 09-TC-03 were found to be federal mandates. The same conclusion must be made here because the Regional Water Board exercised its discretion to impose each of the MRP3 requirements at issue in this Test Claim by virtue of a “true choice” and the Clean Water Act does not expressly or explicitly require the specific conditions imposed in the MRP3 conditions at issue.

III. STATEMENT THAT MANDATED COSTS EXCEED \$1,000

Union City states that the actual and/or estimated costs resulting from the mandates imposed by the MRP3 exceed one thousand dollars (\$1,000), as set forth in this Written Narrative and in the declarations included in Section 6 of this Test Claim.

IV. THE UNFUNDED MANDATES AT ISSUE IN THIS TEST CLAIM AND FISCAL YEAR 2022/2023 COSTS

The MRP3 establishes the prohibitions, limitations, and obligations of Claimants and other Permittees. This Test Claim pertains to the following mandates: MRP3 Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b.

In addition, and in an abundance of caution, this Test Claim also includes the continuation of MRP3 Provisions C.8 (water monitoring), C.10.b (trash reduction) and C.11.a, C.11.e, C.12.f and C.12.h (green infrastructure) requirements that were first imposed in the MRP1 and MRP2 and maintained as requirements in the MRP3. These provisions are pending before the Commission in Consolidated Test Claims 10-TC-02, 10-TC-03 and 10-TC-05 and Test Claim 16-TC-03, respectively. Union City does not believe it is or should be required to reassert these requirements in this Test Claim, but does so in an abundance of caution. Union City would be willing to withdraw these pending issues from this Test Claim with assurances from the Commission that no waiver, forfeiture, or abandonment of rights to subvention would result.

The requirements addressed in this Test Claim, as explained in more detail below, are “programs” within the meaning of Article XIII B, section 6, in that they require Union City to provide certain specified

services to the public. The requirements in this Test Claim are unique to public entities like Union City because they arise from the operation of a municipal separate storm sewer system under NPDES permits issued only to municipalities and which require activities that are not required of private non-governmental dischargers. These requirements include the development and amendment of government planning documents, the development and construction of public works projects and other purely governmental functions.⁵

A test claim must be filed with the Commission “not later than 12 months (365 days) following the effective date of a statute or executive order, or within 12 months (365 days) of first incurring increased costs as a result of a statute or executive order, whichever is later.” (Cal. Code Regs., tit. 2, § 1183.1, subd. (c).)

Union City first incurred costs to comply with the MRP3 on July 1, 2022, the effective date of the MRP3, during fiscal year (“Fiscal Year” or “FY”) 2022-2023 which ended on June 30, 2023. (Section 6 Declaration of Farooq Azim (“Azim Decl.”), ¶ 12; Declaration of Sandra Mathews (“Mathews Decl.”), ¶ 16; Section 7 at S7-0009.) As such, this Test Claim is timely filed.

A. MRP3 New Programs and/or Higher Levels of Service

As the Third District of the Court of Appeal has recently confirmed in *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 559, which involved San Diego County’s stormwater permit:

[T]he application of Section 6 ... does not turn on whether the underlying obligation to abate pollution remains the same.... To determine whether a program imposed by the permit is new, we compare the legal requirements imposed

⁵ Orders issued by the Regional Water Board such as the MRP are “executive orders” within the meaning of Government Code section 17516 and thus properly subject to test claim proceedings. (*County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 920.)

by the new permit with those in effect before the new permit became effective.

1. New Development and Redevelopment

(a) Road Projects

New Requirements. Provision C.3.b of the MRP3 requires Permittees to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility for certain “regulated projects,” including the following:

- (1) New or widening roads (Provision C.3.b.ii.(4)).
- (2) Road reconstruction projects (Provision C.3.b.ii.(5)).

(MRP3 at C.3-8 – 10, Section 7 at S7-0029-0031.)

As the Fact Sheet to the MRP3 concedes, “[w]hile substantial portions of Provision C.3 are the same as during MRP2, the provision includes updated expectations for Regulated Projects, including roads, that are expected to result in additional municipal costs. Those include changes to Regulated Project definitions, including roads.” (MRP3 Fact Sheet at A-30, Section 7 at S7-0289.) For new or widening roads, under the MRP3, these requirements apply to “road projects that create 5,000 square feet or more of newly constructed contiguous impervious surface, that are both public and private road projects.” (MPR3 at C.3-8, Section 7 at S7-0029.) Under the MRP2, the requirement applied only to “road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface.” (MRP2 at C.3.b.ii.(4), Section 7 at S7-1010-1011.) “Road reconstruction projects” was not a regulated category under the MRP2 and, therefore, this is a new program.

The Program’s expenditures for complying with new requirements under Provisions C.3.b.ii.(4) and (5) for Fiscal Year 22/23 was \$41,419, of which Union City’s share was \$2,199. These efforts included revising the C.3 Technical Guidance Manual, the preparation of informational factsheets on the changes to regulated projects, a training workshop, and preparing and provision of guidance to member agencies on the new and higher levels of services required by Provisions C.3.b.ii.(4) and C.3.b.ii.(5)). (Mathews Decl., ¶ 9.a.) In addition, the

City attended the Program's New Development Subcommittee meetings in Fiscal Year 22/23 related, in part, to these new requirements for costs that totaled \$440. (Azim Decl., ¶ 8.a.) The total Union City Fiscal Year 22/23 costs for complying with new requirements under Provisions C.3.b.ii.(4) and (5) were **\$2,639**. (Azim Decl., ¶ 8.a; Mathews Decl., ¶ 10.)

(b) Green Stormwater Infrastructure (GSI)

Modified Higher Levels of Service Requirement. Provision C.3.j.ii.(1)(a)-(g) of the MRP3 requires Permittees to re-evaluate, update and/or supplement their Green Infrastructure Plans (completed under the MRP2) as needed to ensure that municipal processes and ordinances allow and appropriately encourage implementation of green infrastructure, and incorporate lessons learned. This includes revising implementation mechanisms; continuing to update related municipal plans; developing funding mechanisms; updating guidance, details and specifications as appropriate; implementing tracking/mapping tools; adopting/amending legal mechanisms as necessary; and conducting outreach and education. (MRP3 at C.3-45 – 47, Section 7 at S7-0066-0068.) To support its member agencies implementing the increased requirements under Provision C.3.j.ii.(1)(a)-(g), in Fiscal Year 22/23 the Program updated and maintained a GIS platform that allows members to track their green infrastructure projects in order to comply with this new requirement. (Mathews Decl., ¶ 9.i.) In Fiscal Year 22/23, the City commenced the process of updating its Green Infrastructure Plan. (Azim. Decl., ¶ 8.b.)

New Requirement. Provision C.3.j.ii.(4) of the MRP3 requires Permittees to form a regional Technical Working Group to discuss long term GSI goals and recommend long term percentage reductions. (MRP3 at C.3-49, Section 7 at S7-0070.) These are new requirements not included in the MRP2. To support its member agencies implementing the increased requirements under Provision C.3.j.ii.(4), in Fiscal Year 22/23 the Program updated and maintained a GIS platform that allows members to track their green infrastructure projects in order to comply with this new requirement. (Mathews Decl., ¶ 9.i.)

Modified Higher Levels of Service Requirement. Provision C.3.j.ii.(2)(a)-(j) of the MRP3 requires Permittees to implement, or cause to be implemented, green infrastructure projects within their

jurisdictions which are not already defined as Regulated Projects such that impervious surface numeric retrofits are achieved. (MRP3 at C.3-47 – 49, Section 7 at S7-0068-0070.) These numeric targets were not in the MRP2 and therefore were not required in the .Green Infrastructure Plans completed under the MRP2. The imposition of the numeric targets is new and will require Permittees to implement more retrofit projects in the MRP3 term than would have been required in the MRP2. The Permittees may meet the numeric retrofit requirements on a countywide basis. Though Permittees may meet their total individual numeric retrofit requirements on a countywide basis, each Permittee shall implement, or cause to be implemented, a green infrastructure project or projects treating no less than 0.2 acres of impervious surface within its jurisdiction, where that project is not already defined as a regulated project. (*Id.* at C.3-47, Section 7 at S7-0068.) Alternatively, a Permittee may contribute substantially to such a green infrastructure project(s) outside of its jurisdiction and within its County. (*Id.*) The Fact Sheet acknowledges that these new requirements could cost Permittees up to \$181 million of additional costs. (MRP3 Fact Sheet at A-28, Section 7 at S7-0287.) To support its member agencies implementing the increased requirements under Provision C.3.j.ii.(2)(a)-(j), in Fiscal Year 22/23 the Program updated and maintained a GIS platform that allows members to track their green infrastructure projects in order to comply with new requirement. (Mathews Decl., ¶ 9.i.) In Fiscal Year 22/23, the City attended meetings with the Program regarding these Provision C.3 requirements, including municipal staff training. (Azim. Decl., ¶ 8.b.) In Fiscal Year 23/24, the City expects to expend approximately \$520,000 in implementing bioretention treatment areas in compliance with this increased requirement which would not have been required under the MRP2. (*Id.*)

The Program's expenditures for complying with the new and higher levels of service requirements under Provisions C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j) for Fiscal Year 22/23 was \$5,522, of which Union City's share was \$293. (Mathews Decl., ¶ 10.) The City's expenditures for complying with the higher levels of service requirements under Provisions C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j) for Fiscal Year 22/23 was \$1,245. (Azim Decl., ¶ 8.b.) The total Union City Fiscal Year 22/23 costs for all the increased programs under Provisions C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j) was **\$1,538**. (Azim Decl., ¶ 8.b; Mathews Decl., ¶ 10.)

2. Illicit Discharge Detection and Elimination

New Requirement. Provision C.5.f of the MRP3 requires Permittees to identify information missing from the current MS4 Maps and develop a plan and schedule to compile additional storm sewer system information, considering the potential to identify component locations, size or specifications, materials of construction and condition. (MRP3 at C.5-7, Section 7 at S7-0090.) These are new requirements not included in the MRP2.

The total Union City Fiscal Year 22/23 Union City costs for new Provision C.5 programs was \$117, which included consulting with the Program regarding this new requirement. (Azim Decl., ¶ 8.c.)

3. Water Quality Monitoring

Modified Higher Levels of Service Requirements. The MRP3 includes the following new water quality monitoring requirements that were not included in the MRP2. The MRP2 included a monitoring program that included creek status monitoring intended to assess the chemical, physical, and biological impacts of urban runoff on receiving waters (MRP2 at Section 7 at S7-1065 *et seq.*); however, the MRP2 did not include the new requirements described below.

Provision C.8.d of the MRP3 now requires Permittees to conduct LID monitoring to measure compliance and effectiveness of LID controls. “The Permittees shall, at the regional or countywide level, develop LID Monitoring Plans to implement the requirements in Provision C.8.d.iii-iv.” (MRP3 at C.8-2, Section 7 at S7-0104.) Further, “Permittees shall implement no later than ... the approved or conditionally approved LID Monitoring Plans.” (*Id.* at C.8-3, Section 7 at S7-0105.) Permittees are required to implement a monitoring program to measure compliance and the effectiveness of LID facilities. This is a wholly new type of monitoring than what was required under the MRP2 which was limited to creek status monitoring. To support this new MRP3 requirement, in Fiscal Year 22/23 the Program collaborated with the other four countywide programs to form and fund the MRP3-required Technical Advisory Group (“TAG”) with the necessary expertise related to LID monitoring, developed a regional quality assurance plan, identified monitoring locations, developed a monitoring plan for LID facilities in Alameda County, revised the monitoring and quality assurance plans based on feedback from the

TAG, and submitted the plans to the Regional Water Board. (Mathews Decl., ¶ 9.c.)

Provision C.8.e requires Permittees to collect and analyze the amount of trash discharged from MS4 outfalls to answer the questions of whether (1) Permittees' trash management actions effectively prevented trash from their jurisdictions from discharging to receiving waters, and (2) are discharges of trash from within Trash Management Areas controlled to a low trash generation level causing and/or contributing to adverse trash impacts in receiving waters. Specifically, Permittees must:

- (1) [C]ollect and analyze the amount of trash discharged from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system (Provision C.8.e.ii.(1)).
- (2) [I]mplement a pilot program to directly (in-stream) sample sections of receiving waters that receive runoff primarily from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system (Provision C.8.e.ii.(2)).

(MRP3 at C.8-7 – 13, Section 7 at S7-0109-0115.) Trash monitoring was not included in the Provision C.8 water monitoring program under the MRP2. Thus, this is a wholly new type of monitoring than what was required under the MRP2. Permittees now are required to implement a monitoring program to assess the effectiveness of trash control actions and, evaluate whether areas determined to be controlled are contributing to trash impacts. To support this effort, in Fiscal Year 22/23 the Program collaborated with the other four countywide programs to form and fund a separate MRP3-required TAG (with wholly different expertise than the MRP3-required TAG for the new LID monitoring program described above), developed a regional quality assurance plan, identified trash monitoring locations and developed a monitoring plan for the selected sites in Alameda County, revised the monitoring and quality assurance plans based on feedback from the TAG, and submitted the plans to the Regional Water Board. (Mathews Decl., ¶ 9.c.)

Provision C.8.f requires Permittees to conduct Pollutants of Concern (“POC”) monitoring to “assess inputs of select POCs to the Bay from local tributaries and urban runoff, provide information to assess compliance with receiving water limitations, support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.” (MRP3 at C.8-13 – 21, Section 7 at S7-0115-0123.) POC monitoring with receiving water limitations was not included in the Provision C.8 water monitoring program under the MRP2. Thus, this is additional monitoring than what was required under the MRP2 (see Table 8-1 in the MRP3 which describes the onerous new requirements [MRP3 at Section 7 at S7-0117]). Under this higher level of service requirement, Permittees now are required to implement a monitoring program to assess inputs of select POCs to the Bay from local tributaries and urban runoff. To support its member agencies in complying with this new requirement, in Fiscal Year 22/23 the Program developed and submitted a POC monitoring plan and initiated the required monitoring. (Mathews Decl., ¶ 9.d.)

The total Union City Fiscal Year 22/23 Union City costs for these increased Provision C.8 programs was **\$15,374**. (Mathews Decl., ¶ 10.)

4. Trash Load Reduction

(a) Trash Load Reduction Levels

Modified Higher Levels of Service Requirement. The MRP3 requires higher levels of trash load reduction than the MRP2. Permittees are required to implement trash load reduction control actions and demonstrate attainment of trash discharge reduction requirements of 90% by June 30, 2023; and 100% trash load reduction or no adverse impact to receiving waters from trash by June 30, 2025 (Provision C.10.a.i). (MRP3 at C.10-1, Section 7 at S7-0141.) If the 90% benchmark is not attained by June 30, 2023, Permittees must submit revised trash load reduction plan and an implementation schedule of additional trash load reduction control actions to achieve 90% and 100% benchmarks by September 30, 2023. This is a higher level of service than required by the MRP2 which required 70% by July 1, 2017 and 80% by July 1, 2019. (MRP2 at C.10.a(i), Section 7 at S7-1091.) According to the MRP3 Fact Sheet, “Permittees will incur additional costs to proceed from MRP2’s required 80 percent reduction

in trash discharges to the Permit's required 100 percent reduction, to be achieved using a combination of measures determined by each Permittee, and consisting of full trash capture, or implementation of a range of controls equivalent to full trash capture.... Statewide, the economic analysis estimates that between \$2.93 and \$7.77 more per resident might need to be spent each year for the next ten years to implement the proposed Trash Amendments." (MRP3 Fact Sheet at A-31, Section 7 at S7-0290.) To support this higher level of service requirement, in Fiscal Year 22/23 the Program held subcommittee meetings and prepared guidance for members on the new requirements, updates and modifications were made to GIS maps to support members, and GIS-based inspection applications were developed. (Mathews Decl., ¶ 9.e.) The City expended costs on pre-design and planning in Fiscal Year 22/23 associated with this higher level of service requirements. (Azim Decl., ¶ 8.d.)

(b) Private Lands and Trash Generation Map

Modified Higher Levels of Service Requirements. Provision C.10.a.ii of the MRP3 requires that Permittees ensure that private lands that are moderate, high, or very high trash generating, and that drain to storm drain inlets that Permittees do not own or operate (private), but that are plumbed to Permittees' storm drain systems are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems by July 1, 2025. (MRP3 at C.10-3, Section 7 at S7-0143.) This is a very significant new undertaking for Permittees that was not required under the MRP2. Provision C.10.a.ii of the MRP3 also requires Permittees to submit a revised Trash Generation Area Map by September 30, 2024 that includes trash management areas and private land drainage areas that will be retrofitted with full trash capture devices, or equivalent, by the June 30, 2025 compliance date. (MRP3 at C.10-2, Section 7 at S7-0142.) The MRP2 did require a Trash Generation Map but under the MRP3 those Maps have to be completely redone to depict private land areas that generate trash.

To support these Provision C.10.a.ii higher levels of service requirements, in Fiscal Year 22/23 the Program held subcommittee meetings and prepared guidance for members on the new requirements, updates and modifications were made to GIS maps to support members, and GIS-based inspection applications were developed. (Mathews Decl., ¶ 9.e.) In addition, in Fiscal Year 22/23,

the City attended the Program's Trash Subcommittee meetings and used a consultant to update its Trash Generation Area Map, an activity that continued into Fiscal Year 23/24. (Azim Decl., ¶ 8.d.)

(c) Impracticability Report

New Requirement. Provision C.10.e of the MRP3 requires Permittees to collectively develop a Trash Impracticability Report that includes a process for both evaluating impracticability and implementing partial benefit actions to the maximum extent practicable by March 31, 2023. (MRP3 at C.10-9-10, Section 7 at S7-0149-0150.) The Report was submitted to the Regional Water Board on March 27, 2023. (Mathews Decl., ¶ 9.f.) Further, Provisions C.10.d and C.10.e.iv require Permittees to use an approved Trash Impracticability Report in developing updated Trash Load Reduction Work Plans. (MRP3 at C.10-10, Section 7 at S7-0150.) These are new requirements for which the State acknowledges "Permittees would incur costs to prepare an impracticability report." (MRP3 Fact Sheet at A-32, Section 7 at S7-0291.) The Program worked collaboratively with the four other countywide programs to fund the development of the Trash Impracticability Report. The Trash Impracticability Report was submitted to the Regional Water Board on March 27, 2023. (Mathews Decl., ¶ 9.f.)

For Fiscal Year 22/23, the Program's expenditures for complying with the new and higher levels of service requirements under Provisions C.10.a. as described above was \$52,362, of which Union City's share was \$2,780. (Mathews Decl., ¶ 10.) For Fiscal Year 22/23, the Program's expenditures for complying with the new requirements under Provisions C.10.e. as described above was \$11,977, of which Union City's share was \$636. (*Id.*) For Fiscal Year 22/23, the City's expenditures for complying with the new and higher levels of service requirements under Provisions C.10.a. as described above was \$18,348. (Azim Decl., ¶ 8.e.) The total Union City Fiscal Year 22/23 costs for all the increased programs under Provisions C.10.e was \$265. (Azim Decl., ¶ 8.e.; Mathews Decl., ¶ 10.) The total Union City Fiscal Year 22/23 costs for new Provision C.10.a and C.10.e programs was **\$22,029**. (Azim Decl., ¶ 8.d; Mathews Decl., ¶ 10.)

5. Mercury and PCBs Controls

(a) Old Industrial Land

Modified Higher Levels of Service Requirements. Provision C.11.c of the MRP3 requires Permittees to implement or cause to be implemented stormwater control measures to treat old industrial land use at 70% efficiency, or by demonstrating an equivalent mercury load reduction. (MRP3 at C.11-4 – 6, Section 7 at S7-0159-0161.) Additionally, Provision C.12.c of the MRP3 requires Permittees to implement or cause to be implemented treatment control measures to treat old industrial land use at 70% efficiency, or by demonstrating an equivalent PCBs load reduction. These are new requirements than required by the MRP2 which did not require implement stormwater control measures to treat old industrial land. The Fact Sheet for the MRP3 notes that Permittees implement GSI retrofit to achieve mercury and PCBs reductions and the increased cost of achieving such reductions may be up to \$2 billion. (MRP3 Fact Sheet at A-34 – 35, Section 7 at S7-0293-0294.) To support these increased requirements, in Fiscal Year 22/23 the Program developed the Old Industrial Area Control Measure Plan that included plans and schedules for implementing the required control measures. The Plan was submitted in March 2023. Subsequent to submittal, the Program members and consultants met with Regional Water Board staff and planned revisions to the plan, which are due in March 2024. (Mathews Decl., ¶ 9.g.) Additionally, in Fiscal Year 22/23, the City engaged in planning activities with the Program regarding these increased Provision C.11.c and C.12.c requirements. (Azim Decl., ¶ 8.e.)

For Fiscal Year 22/23, the Program's expenditures for complying with the higher levels of service requirements under Provisions C.11.c and C.12.c. as described above was \$59,430, of which Union City's share was \$3,156. (Mathews Decl., ¶ 10.) For Fiscal Year 22/23, the City's expenditures for complying with the higher levels of service requirements under Provisions C.11.c and C.12.c. as described above was \$331. (Azim Decl., ¶ 8.e.) The total Union City Fiscal Year 22/23 costs for the higher levels of service requirements under Provisions C.11.c and C.12.c. as described above was **\$3,487**. (Azim Decl., ¶ 8.e; Mathews Decl., ¶ 10.))

(b) Quantify and Report PCBs Load Reductions

Modified Higher Levels of Service Requirement. Provision C.12.a of the MRP3 requires Permittees to quantify and report the PCBs load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures and submit documentation annually confirming that all control measures effectuated during the previous Permit term for which PCB load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction. The MRP3 requires annual assessment of loads reduced with documentation of the implementation level to justify the method (credits). This is a higher level of effort than MRP2 requirements which did not have this requirement and results in additional costs. Further, two additional requirements in this provision are new: a cumulative report loads reduced and refinements to the assessment methodology. To support member agencies' compliance with this increased requirement, the Program consultants tracked and analyzed data on control measure implementation to calculate loads reduced. (Mathews Decl., ¶ 9.h.)

The Union City Fiscal Year 22/23 costs for increased requirements under Provision C.12.a program were **\$351** (Mathews Decl., ¶ 10.)

6. Exempted and Conditionally Exempted Discharges

New Requirement. Provision C.15.b.iii. of the MRP3 requires Permittees to collectively convene a regionwide Firefighting Discharges Working Group with Water Board staff and other stakeholders to identify and evaluate opportunities to reduce the impacts of emergency discharges to the MS4 associated with firefighting water and foam. (MRP3 at C.15-6 – 7, Section 7 at S7-0209-0210.) This is a new requirement that was not in the MRP2, which only required Permittees to implement or require firefighting personnel to implement BMPs for emergency discharges of potable water. (MRP2 at C.15.b.iii, Section 7 at S7-1131-1132.)

The Union City Fiscal Year 22/23 Union City costs for new Provision C.15.b.iii. programs were **\$280**. (Mathews Decl., ¶ 10.)

7. Discharges Associated with Unsheltered Homeless Populations

New Requirement. Provision C.17.a of the MRP3 requires Permittees to collectively develop and submit a best management practice report that identifies practices to address non-storm water discharges associated with homelessness into MS4s that impact water quality and specific milestones for reducing such discharges. (MRP3 at C.17-1 – 3, Section 7 at S7-0218-0220.) Provision C.17.a of the MRP3 also requires Permittees to report on the programmatic efforts being implemented within Permittee’s jurisdiction, or at the countywide or regional level, to address MS4 discharges associated with homelessness. (*Id.*) The MRP3 Fact Sheet acknowledges these are new programs. (MRP3 Fact Sheet at A-38, Section 7 at S7-0297.)

Permittees are required to develop and submit a regional best management practice report to identify control measures to address non-stormwater discharges associated with unsheltered homeless populations and identify milestones to reduce such discharges. To meet this new MRP3 requirement, the Program collaborated with the other four countywide programs on a regional project to develop the required best management practice report, which was submitted with each Permittee’s Fiscal Year 22/23 annual report. (Mathews Decl., ¶9.j.) Additionally, each Permittee is required to submit a map identifying, the approximate locations of unsheltered homeless populations, including encampments and other areas where other unsheltered homeless people live relative to storm drains, creeks, and flood control channels. To support its members, the Program worked with County officials to obtain the required geo-located point in time count data, developed an approach for creating the maps, and updated its GIS system to produce the required maps for each of its members. (*Id.*) The City submitted the maps with its Fiscal Year 22/23 annual report.

The Union City Fiscal Year 22/23 Union City costs for new Provision C.17 programs were **\$2,455**. (Mathews Decl., ¶ 10; Azim Decl., ¶ 8.g.)

8. Cost Reporting

New Requirement. Provision C.20.b of the MRP3 requires Permittees to develop a cost reporting framework and methodology to perform an annual fiscal analysis. Permittees are encouraged to

collaboratively develop the framework and methodology for purposes of efficiency, cost-savings, and regionwide consistency and comparability. The framework shall consider identification of costs incurred solely to comply with the Permit's requirements as listed in Provision C.20.b.(iii) as compared to costs shared with other programs or regulatory requirements, provide meaningful data to assess costs of different program areas, and allow for comparisons and to identify trends over time. (MRP3 at C.20-1 – 2, Section 7 at S7-0238-0239.) The MRP3 Fact Sheet acknowledges these are wholly new programs and Permittees "are expected to incur costs to collectively develop the methodology and then to implement it." (MRP3 Fact Sheet at A-38 – 39, Section 7 at S7-0297-0298.) To meet this new requirement, the Program collaborated with the other four countywide programs on a regional project to develop the cost reporting framework and methodology, which was submitted on June 26, 2023. (Mathews Decl., ¶ 9.k.) Updates to the cost reporting framework and methodology based on Regional Water Board comments are in process. The Program will additionally provide training for its members on the use of the cost reporting framework and methodology. (*Id.*)

The Union City Fiscal Year 22/23 Union City costs for new Provision C.20 programs were **\$2,878**. (Mathews Decl., ¶ 10.)

9. Asset Management

New Requirement. Provision C.21.b of the MRP3 requires Permittees to Complete a Climate Change Adaptation Report to identify potential climate change-related threats to assets and appropriate adaptation strategies. The report shall assess existing, new, and increasing threats from climate change to the condition of Permittees' inventoried hard assets over the next 50 years, and identify approaches that Permittees may implement to address those threats, such as the modification of design standards and countywide technical guidance documents. The Climate Change Adaptation Report may be developed on an all-Permittee (regional) scale or countywide scale. (MRP3 at C.21-1 – 2, Section 7 at S7-0240-0241.) The MRP3 Fact Sheet acknowledges these are wholly new programs and that will result in additional costs. (MRP3 Fact Sheet at A-38, 40, Section 7 at S7-0297, 0299.) Permittees are required to develop and implement an asset management plan to ensure the satisfactory condition of all hard assets constructed during MRP3 and the previous permit terms pursuant to provisions C.2, C.3, C.10, C.11, C.12, C.13, and C.17.

Mathews Decl., ¶9.1.) Additionally, Permittees are required to develop and submit a climate change adaptation report to identify potential climate change-related threats to assets and appropriate adaptation strategies. To help Permittees meet these new requirements the Program initiated work on a framework to guide the development of the asset management plans by individual members. (*Id.*)

The Union City Fiscal Year 22/23 Union City costs for new Provision C.21.b programs were **\$469**. (Mathews Decl., ¶ 10.)

10. Total Amount of Increased Costs for New Programs or Higher Levels of Service in MP3 for Fiscal Year 22/23

As set forth in the Azim Declaration at Paragraph 8 and in the Mathews Declaration at Paragraph 10, the total amount of Union City's increased costs for Fiscal Year 22/23 for the new programs or higher levels of service for MRP3 Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b was **\$51,619**.

B. Continuing MRP1 and MRP2 Test Claim Programs

The following are programs in the pending MRP1 and MRP2 Test Claims which are continuing in the MRP3 term and for which Permittees have incurred costs in the MRP3 term. As explained above, out of an abundance of caution, the City is seeking reimbursement in this Test Claim for the continuation of costs that are already before the Commission in Consolidated Test Claims 10-TC-02, 10-TC-03, regarding the MRP1, and Test Claim 16-TC-03, regarding the MRP2. To avoid unnecessary duplication, Union City hereby incorporates by this reference all of the portions of the record in these MRP1 and MRP2 proceedings regarding these continuing mandates in the MRP3. As noted above, these proceedings are pending before the Commission.

1. Continuing Water Quality Monitoring

Permittees were required to implement a number of water quality monitoring programs under Provision C.8. These requirements are discussed in Claimant's MRP1 Test Claim, which is currently pending. Permittees continue to incur costs necessary to comply with

these provisions. The Program’s expenditures for complying with the continuing Provision C.8 programs in Fiscal Year 22/23 were \$203,255, and Union City’s share of those costs was **\$11,107**. (Mathews Decl., ¶ 10.)

2. Continuing Trash Capture Maintenance

Provision C.10.b. of the MRP2 required Permittees to “maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system.” (MRP2 at C.10.b, Section 7 at S7-1093-1096.) This provision specified detailed full trash capture system installation and maintenance instructions. Provision C.10.b. in the MRP2 required increased activities by Union City that are best characterized as a higher level of service in comparison to the MRP1. The MRP3 continues these requirements. (MRP3 at C.10-3 *et seq.*, Section 7 at S7-0143–0148.) These requirements were first raised in the Test Claim for the MRP1 (Consolidated Test Claims 10-TC-02, 10-TC-03 and 10-TC-05, which are pending before the Commission) and were continued or increased in the MRP2 Permit Term (Test Claim 16-TC-03, which is pending before the Commission).

For Fiscal Year 22/23, the total Union City Costs for these continuing programs were **\$217,017**. (Mathews Decl., ¶ 10; Azim Decl., ¶ 9.)

3. Mercury and PCBs Control

Provision C.11.b. of the MRP2 required Permittees to “develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury loads reduced through implementation of pollution prevention, source control and treatment control measures” required by the provisions of the Permit or load reductions achieved through other relevant efforts. (MRP2 at C.11.b, Section 7 at S7-1102-1103.) This program is continuing under Provision C.11.a. of the MRP3. (MRP3 at C.11-1 – 2, Section 7 at S7-0156-0157.) These requirements were first raised in the Test Claim for the MRP2 (Test Claim 16-TC-03, which is pending before the Commission).

Provision C.11.c. of the MRP2 required Permittees to implement green infrastructure projects during the term of the permit to achieve mercury load reductions of 48 g/year by June 30, 2020. (MRP2 at C.11.c, Section 7 at S7-1103-1105.) Provision C.11.e of the MRP3 requires Permittees to “implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j.” (MRP3 at C.11-6 – 7, Section 7 at S7-0161-0162.) These requirements were first raised in the Test Claim for the MRP2 (Test Claim 16-TC-03, which is pending before the Commission).

Provision C.12.c. of the MRP2 required Permittees to “implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions” of 120 g/year by June 30, 2020. (MRP2 at C.12.c, Section 7 at S7-1110-1112.) Provision C.12.f of the MRP3 requires Permittees to “implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j.” (MRP3 at C.12-8, Section 7 at S7-0172.) These requirements were first raised in the Test Claim for the MRP2 (Test Claim 16-TC-03, which is pending before the Commission).

Provision C.12.d. of the MRP2 required Permittees to “prepare a plan and schedule for PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.” (MRP2 at C.12.d, Section 7 at S7-1113.) In 2020, Permittees submitted a Reasonable Assurance Analysis and plan (“RAA”) demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030. Provision C.12.h of the MRP3 requires Permittees to “update, as necessary, their PCBs control measures implementation plan and RAA.” (MRP3 at C.12-11 – 12, Section 7 at S7-0175-0176.) These requirements were first raised in the Test Claim for the MRP2 (Test Claim 16-TC-03, which is pending before the Commission).

For Fiscal Year 22/23, the total Union City Costs for these continuing programs was **\$66,489**. (Mathews Decl., ¶ 10; Azim Decl., ¶ 9.)

V. CLAIMANT COST ESTIMATE OF INCREASED COSTS FOR FISCAL YEAR 2023/2024

Government Code section 17553, subdivision (b)(1)(D), requires the actual or estimated annual costs that will be incurred by the claimant to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed. For Fiscal Year 2023/2024,⁶ the total estimated Union City costs for new or increased programs under MRP3 Provisions C.3.b.ii.(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b are as follows:⁷

Task	Estimated Union City FY 23/24 Costs	Union City Share of FY 23/24 Program Costs (5.31%)	Total Estimated Union City FY 23/24 Costs
MPR3 New or Increased Programs	\$803,415	\$49,334	\$852,749

(Azim Decl., ¶ 8; Mathews Decl., ¶ 13.)

VI. STATEWIDE COST ESTIMATE OF INCREASED COSTS FOR FISCAL YEAR 2023/2024

Government Code section 17553, subdivision (b)(1)(E), requires a statewide cost estimate of increased costs that all local agencies incurred or will incur to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed. Since this Test Claim is based on the MRP3, the statewide impact of the permit is limited to those Bay Area jurisdictions that are subject to the MRP3. Neither Union City nor the Program has access

⁶ Fiscal Year 22/23 is the fiscal year for which the claim was filed. Fiscal Year 23/24 is the fiscal year immediately following the fiscal year for which the claim was filed.

⁷ As Fiscal Year 23/24 is ongoing through June 30, 2024, the costs provided are estimates.

to detailed cost information for each jurisdiction subject to the MRP3. As explained in the attached Mathews Declaration, the City has used its own cost information and population size, combined with information available to the Program, to project estimated cost impacts for all jurisdictions subject to the MRP3. For Fiscal year 2023/2024, the estimated statewide costs are as follows:

	Total Estimated FY 23/24 Union City Costs	Estimated FY 23/24 Statewide Costs (80 x Union City)
MPR3 New or Increased Programs	\$852,749	\$68,200,880

(Mathews Decl., ¶ 15.) Thus, in compliance with Government Code section 17553(b)(1)(E), the total estimated amount of statewide costs (i.e., the statewide cost estimate of increased costs that all local agencies will incur to implement the new programs and higher levels of service) for Fiscal Year 23/24 for the new programs and higher levels of service in the MRP3 is **\$68,200,880**.

VII. DATES ON WHICH COSTS WERE FIRST INCURRED AFTER THE EFFECTIVE PERIOD

All costs were incurred after July 1, 2022, the effective date of the MRP3. (Azim Decl., ¶ 12; Mathews Decl., ¶ 16; Section 7 at S7-0009.) The start of MRP3 coincided with the start of the Program’s fiscal year, July 1, 2022, which is the same date that consultant invoices indicate incurred costs as a result of implementing the new activities and modified existing activities mandated by MRP3. (Mathews Decl., ¶ 16.)

VIII. IDENTIFICATION OF FUNDING SOURCES

Government Code section 17553, subdivision (b)(1)(F), requires the City to identify available funding sources for these MRP3 programs. Union City is not aware of any dedicated state, federal or non-local agency funds that are or will be available to fund the MRP3 new activities at issue in this Test Claim. The City has a Clean Water Fund, which obtains revenue from property tax assessments, and is supplanted by the General Funds. The salaries and benefits identified in the Azim Declaration in Section 6 are paid from general funds which include the City’s General Fund and the Clean Water Fund. The other

costs identified in the Azim Declaration in Section 6 are funded by the City's General Fund and the Clean Water Fund. The City's share of the Program's costs identified in the Mathews Declaration in Section 6 are funded by the Clean Water Fund. The City has no fee authority to increase these revenue sources without seeking voter approval under Proposition 218. Thus, the City does not have authority to increase these fees – only the voters have that authority.⁸ Further, the City is not confident that it will be able to avail itself of future grant opportunities. The City has no grant applications pending for the stormwater program. Furthermore, multiple jurisdictions must compete for limited funding sources, creating stiff competition among municipalities. (See Azim Decl., ¶¶ 12-14.)

IX. PRIOR MANDATE DETERMINATIONS

Government Code section 17553, subdivision (b)(1)(G), requires Test Claimants to identify prior mandate determinations that may be related to the mandates at issue. The Commission's July 31, 2009, Statement of Decision in Test Claim Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21 (*Los Angeles Regional Water Quality Control Board Order No. 01-182*), the Commission's March 26, 2010, Statement of Decision in Test Claim No. 07-TC-09 (*San Diego Regional Water Quality Control Board Order No. R9-2007-0001*) and the Commission's March 24, 2023, adoption of the proposed decision regarding Test Claim 09-TC-03 (*Santa Ana Regional Water Quality Control Board Order No. R8-2009-0030*), include analyses that are related to the mandates at issue in Union City's Test Claim.

X. NO LEGISLATIVELY DETERMINED MANDATE APPLICABLE TO THE MRP3

Under Government Code section 17573, the Department of Finance and a local agency association may jointly request of the chairpersons of the committees in each house of the Legislature that consider appropriations, and the chairpersons of the committees and appropriate subcommittees in each house of the Legislature that

⁸ See *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, holding that a stormwater fee was a property related fee governed by Article XIII D of the California Constitution and that such a fee could not be imposed unless it was approved by the voters.

consider the State Budget, that the Legislature determine that a statute or executive order, or portion thereof, mandates a new program or higher level of service requiring reimbursement of local governments. There is no legislatively determined mandate applicable to the MRP3 and this Test Claim.

XI. NO DUPLICATE TEST CLAIM

This Test Claim is the first filed test claim for the following MRP3 Provisions as set forth herein: Provisions C.3.b.ii.(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b. (Govt. Code § 17521.) According to the Commission’s October 11, 2023, Notice of Duplicate and Incomplete Test Claim (“Notice”), Union City’s Test Claim is the first filed Test Claim related to these MRP3 provisions and therefore nothing additional needs to be included herein related to this aspect of the Notice.

XII. CONCLUSION

For the reasons set forth in this Test Claim package, Union City respectfully requests that the Commission approve the City’s Test Claim.

5720994.1

6. DECLARATIONS

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
MUNICIPAL REGIONAL STORMWATER NPDES PERMIT**

**ORDER NO. R2-2022-0018
AS MODIFIED BY ORDER NO. R2-2023-0019
NPDES PERMIT NO. CAS612008
MAY 11, 2022**

1 DECLARATION OF FAROOQ AZIM IN SUPPORT OF TEST CLAIM

2 I, FAROOQ AZIM, declare as follows:

3 1. I make this declaration in support of the Test Claim submitted by
4 the City of Union City (“Union City” or “City”) to the Commission on State
5 Mandates. Except where otherwise indicated, the facts set forth below are of
6 my own personal knowledge and, if called upon to testify, I could and would
7 competently testify to the matters set forth herein.

8 2. I have received the following credentials: In 1981, I received a
9 Bachelor of Science degree in Civil Engineering from the Mapua Institute of
10 Technology, Manila, Philippines. In 1982, I received a Bachelor of Science
11 degree in Engineering (BSE), with concentration in Civil Engineering from
12 Indiana Institute of Technology, Fort Wayne, IN. In 1985, I received a Master
13 of Science in Civil Engineering (MSCE), specializing in Geotechnical (Soils and
14 Foundation) Engineering. In 2005, I received a Master of Business
15 Administration (MBA), with concentration in Finance from California State
16 University, East Bay. In 1995, I received a Professional Engineer License
17 from the California Board for Professional Engineers, Land Surveyors, and
18 Geologists.

19 3. I am employed by the City as the City Engineer. I was appointed
20 by the City Manager and have held this position since 2018. I supervise a staff
21 of six, consisting of three Inspectors and three Engineers. I am responsible for
22 designing, managing, and implementing all aspects (e.g., sampling, design,
23 field work, analytical analysis, quality control, data management, O&M
24 reports, interpretation and reporting) of water quality monitoring and other
25 compliance actions required by regional municipal stormwater National
26 Pollutant Discharge Elimination System (“NPDES”) permits issued to the
27 City.

28 ///

1 4. I have a total of 34 years of experience as a civil engineer. I
2 started my civil engineering career with W.H. Gordon Associates in Reston,
3 VA, a suburb of Washington DC, where I designed and reviewed new
4 development projects, including housing tract developments. My second job
5 was with a private Geotechnical Engineering firm in Pleasanton, CA. I joined
6 the City in 1991 as a junior engineer (Engineer I) and was introduced to
7 municipal engineering. I have been promoted since then and have been the
8 City Engineer since 2018. I have been involved with various aspects of
9 municipal engineering including the capital improvement program (“CIP”) and
10 the Land Development aspect of municipal engineering, which includes the
11 review and approval of all new private developments in the City, including the
12 storm water aspects of new development. I have also been attending a variety
13 of Alameda Countywide Clean Water Program (“Program”) meetings,
14 including representing the City at various quarterly meetings which are
15 attended by all member agencies of the Program, for more than 10 years.

16 5. Union City is subject to the Municipal Regional Stormwater
17 (“MRP”) NPDES Permit, issued by the California Regional Water Quality
18 Control Board, San Francisco Bay Region (“Regional Board”), Order No. R2-
19 2022-0018 (NPDES Permit No. CAS612008), issued by the Regional Board on
20 May 11, 2022 (“MRP3” [Section. 7 p. S7-0002]) with an effective date of July 1,
21 2022, and amended on October 11, 2023. I have reviewed the MRP3 and am
22 familiar with its requirements.

23 6. I have also reviewed and am familiar with the requirements of
24 Order No. R2-2015-0049 (NPDES Permit No. CAS612008), issued by the
25 Regional Board on November 19, 2015 (“MRP2” [Section 7 p. S7-0992]), under
26 which the City was a Permittee, and with Order No. R2-2009-0074 (NPDES
27 Permit No. CAS612008) issued by the Regional Board on October 14, 2009,
28

1 amended by Order No. R2-2011-0083 on November 28, 2011 (“MRP1” [Section
2 7 p. S7-1352]), under which the City was a Permittee.

3 7. Based on my understanding of the MRP2 and the MRP3, I believe
4 the MRP3 requires Permittees, including Union City, to perform new activities
5 that are unique to local governmental entities that were not required by the
6 MRP2.

7 8. The MRP3’s new activities and higher levels of service include the
8 following. The City’s actual costs for FY 22/23 are identified herein; the City’s
9 actual share of Program costs for FY 22/23 are identified in the Declaration of
10 Sandra Mathews in support of this Test Claim (“Mathews Declaration). The
11 costs herein for FY 22/23 are actual for the entire FY 22/23. The estimated
12 costs for FY 23/34 herein, which ends on June 30, 2024, and therefore is
13 ongoing, are estimated based on activities to-date and anticipated activities.
14 Unless otherwise noted, the employee rates provided below are rounded to the
15 nearest dollar and are based on my discussions with Jackie Acosta, Finance
16 Director for Union City, which were developed based on salaries plus benefits.

17 (a) New Development and Redevelopment.

18 i. New Requirements. Provision C.3.b of the MRP3
19 requires Permittees to implement low impact development (“LID”) source
20 control, site design, and stormwater treatment onsite or at a joint stormwater
21 treatment facility for certain “regulated projects,” including the following:

22 (1) New or widening roads (Provision C.3.b.ii.(4)).

23 **FY 22/23 Actual Costs:** Applicable Regulated Projects are unknown at this
24 time. Union City attended the Program’s New Development Subcommittee
25 meetings in FY 22/23. There were four 2-hour quarterly meetings in FY 22/23,
26 with approximately 1/8 of the time spent on Provision C.3.b.ii.(4).

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Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Azim)

FY22/23 Provision C.3.b.ii.(4) Actual Costs			
Person	Time (Hours)	FY22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	1	\$117	\$117
Tommy Cho (Principal Civil Engineer)	1	\$103	\$103
TOTAL			\$220

FY 23/24 Estimated Costs: Applicable Regulated Projects are unknown at this time. Union City has attended and will attend the Program’s New Development Subcommittee meetings in FY 23/24. It is anticipated there will be four 2-hour quarterly meetings in FY 23/24, with approximately 1/8 of the time spent on Provision C.3.b.ii.(4).

FY23/24 Provision C.3.b.ii.(4) Estimated Costs			
Person	Time (Hours)	FY23/24 Rate/Hour	Cost
Farooq Azim (City Engineer)	1	\$129	\$129
Tommy Cho (Principal Civil Engineer)	1	\$111	\$111
TOTAL			\$240

(2) Road reconstruction projects (Provision C.3.b.ii.(5)).

FY 22/23 Actual Costs: Applicable Regulated Projects are unknown at this time. Union City attended the Program’s New Development Subcommittee meetings in FY 22/23. There were four 2-hour quarterly meetings in FY 22/23, with approximately 1/8 of the time spent on Provision C.3.b.ii.(5).

FY22/23 C.3.b.ii.(5) Actual Costs			
Person	Time (Hours)	FY22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	1	\$117	\$117
Tommy Cho (Principal Civil Engineer)	1	\$103	\$103
TOTAL			\$220

FY 23/24 Estimated Costs: Applicable Regulated Projects are unknown at this time. Union City has attended and will attend the Program’s New Development Subcommittee meetings in FY 23/24. It is anticipated there will

1 be four 2-hour quarterly meetings in FY 23/24, with approximately 1/8 of the
 2 time spent on Provision C.3.b.ii.(5).

FY23/24 C.3.b.ii.(5) Estimated Costs			
Person	Time (Hours)	FY 23/24 Rate/Hour	Cost
Farooq Azim (City Engineer)	1	\$129	\$129
Tommy Cho (Principal Civil Engineer)	1	\$111	\$111
TOTAL			\$240

7 (b) Green Stormwater Infrastructure (GSI)

8 i. Modified Higher Levels of Service Requirements.

9 Provision C.3.j.ii.(1)(a)-(g) of the MRP3 requires Permittees to update and/or
 10 supplement their Green Infrastructure Plans as needed to ensure that
 11 municipal processes and ordinances allow and appropriately encourage
 12 implementation of green infrastructure, and incorporate lessons learned. This
 13 includes revising implementation mechanisms; continuing to update related
 14 municipal plans; developing funding mechanisms; updating guidance, details
 15 and specifications as appropriate; implementing tracking/mapping tools; and
 16 adopting/amending legal mechanisms as necessary.

17 **FY22/23 Actual Costs:** I contacted HDR Consultants in June 2023 requesting
 18 it provide a quote to update the Green Infrastructure Plan that HDR had
 19 prepared in 2019. We discussed the need and scope for the Plan and
 20 exchanged emails and engaged in telephone conversations.

FY22/23 Provision C.3.j.ii.(1)(a)-(g) Actual Costs			
Person	Time (Hours)	FY22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	2	\$117	\$234
TOTAL			\$234

25 **FY 23/24 Estimated Costs:** The HDR proposal was received in July 2023 and
 26 was reviewed by me. Given the relatively large amount of the HDR proposal,
 27 it was determined that the City would have to go through the request for
 28 proposal (RFP) process which would allow other prospective consultants to

1 provide a proposal for this task. I do not anticipate this activity to occur in
 2 FY 23/24, however.

FY23/24 Provision C.3.j.ii.(1)(a)-(g) Costs		
Activity: Update and/or supplement their Green Infrastructure Plans		
Person	Hours x FY23/24 Rate	Rate/Hour
Farooq Azim (City Engineer)	18 x 129	\$2,222
TOTAL		\$2,322

7 ii. Modified Higher Level of Service Requirements.

8 Provision C.3.j.ii.(2)(a)-(j) of the MRP3 requires Permittees to implement, or
 9 cause to be implemented, green infrastructure projects within their
 10 jurisdictions which are not already defined as Regulated Projects. The
 11 Permittees may meet the numeric retrofit requirements on a countywide basis.
 12 Though Permittees may meet their total individual numeric retrofit
 13 requirements on a countywide basis, each Permittee shall implement, or cause
 14 to be implemented, a green infrastructure project or projects treating no less
 15 than 0.2 acres of impervious surface within its jurisdiction, where that project
 16 is not already defined as a Regulated Project. Alternatively, a Permittee may
 17 contribute substantially to such a green infrastructure project(s) outside of its
 18 jurisdiction and within its County.

19 **FY 22/23 Actual Costs:** The City has attended meetings with the Program
 20 regarding these Provision C.3.j.ii.(2)(a)-(j) requirements, including municipal
 21 staff training, and incurred the following costs implementing C.3.j.ii.(2)(a)-(j)
 22 programs in FY 22/23.

FY 22/23 Actual Costs C.3.j.ii.(2)(a)-(j)			
Person	Time (Hours)	FY22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	6	\$117	\$702
Tommy Cho (Principal Civil Engineer)	3	\$103	\$309
TOTAL			\$1,011

1 Although the Second Incomplete Letter states “no fiscal year 2023-2024 costs
2 are provided” (p. 10), those estimate costs are provided in the next table.

3 **FY 23/24 Estimated Costs:** Union City has attended and will attend the
4 Program’s New Development Subcommittee meetings in FY 23/24. It is
5 anticipated there will be four 2-hour quarterly meetings in FY 23/24, with
6 approximately 1/4 of the time spent on Provision C.3.j.ii.(2)(a)-(j) .

7 Additionally, the Union City Bike Lane Improvement Project includes
8 approximately 2.5 miles of improvements on Union City Blvd. from Smith
9 Street to the southern City limits. Union City Blvd., a major arterial, has two
10 traffic lanes in each direction. The project involves widening the roadway by
11 reducing the existing median to accommodate the installation of bicycle lanes
12 alongside the existing two traffic lanes. The MRP3 mandates municipalities to
13 meet the numeric retrofit requirements listed in Table H-1 of Attachment H in
14 the MRP3. Union City, in compliance with this, is required to implement
15 green infrastructure to treat a total of 4.45 acres throughout the City. The
16 City has chosen to incorporate stormwater treatment into the Bike Lane
17 Improvement Project to meet the numeric retrofit requirements. A total of 12
18 landscaping areas were identified for bioretention installation in the project,
19 providing a total of 6,970 square feet to treat roughly 4.16 acres of impervious
20 area. The estimated total cost for implementing these bioretention treatment
21 areas is approximately \$520,000 which includes the design and construction
22 management. These costs are expected to be incurred in FY23/24.

23
24 Additionally, the Program recently initiated an Alternative Compliance
25 and Numeric GSI Target workgroup to develop approaches for Permittees to
26 meet the C.3.j numeric targets. In addition to the costs below, the City may
27 incur additional costs is FY 23/24 participating in these meetings.

28 ///

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Azim)

Y23/24 Provisions C.3.j.ii.(2)(a)-(j) Estimated Costs			
Program Meeting Attendance			
Person	Time (Hours)	FY23/24 Rate/Hour	Cost
Farooq Azim (City Engineer)	2	\$129	\$258
Tommy Cho (Principal Civil Engineer)	2	\$111	\$222
Provision C.3.j.ii.(2)(a)-(j) Retrofits			520,000
TOTAL			\$520,480

(c) Illicit Discharge Detection and Elimination.

i. New Requirements. Provision C.5.f of the MRP3 requires Permittees to identify information missing from the current municipal separate storm sewer systems (“MS4”) maps and develop a plan and schedule to compile additional storm sewer system information, considering the potential to identify component locations, size or specifications, materials of construction, and condition. I have analyzed and coordinated with Sandra Mathews, consultant for the Program, to discuss the implementation of this requirement. In FY22/23, I spent a total of one hour for such coordination at a cost of \$117 per hour; therefore, these are the actual costs for Provision C.5.f for FY 22/23. For FY23/24, I estimate spending additional time to identify what maps are available, what information is missing and work to fill in gaps in information.

FY23/24 Provision C.5.f Estimated Costs			
Person	Time (Hours)	FY 23/24 Rate/Hour	Cost
Farooq Azim (City Engineer)	10	\$117	\$1,170
Eddie Yu (Principal Civil Engineer)	70	\$78	\$5,460
TOTAL			\$6,630

(d) Trash Load Reduction

i. Modified Higher Levels of Service Requirements.

(1) The MRP3 requires Permittees to implement trash load reduction control actions and demonstrate attainment of trash discharge reduction requirements of 90% by June 30, 2023; and 100% trash load reduction or no adverse impact to receiving waters from trash by June 30, 2025 (Provision C.10.a.i.).

FY 22/23 Actual Costs: The City expended the following costs on pre-design and planning in FY 22/23 associated with these higher level of service requirements:

FY 22/23 Provision C.10.a.i. Actual Costs			
Person/Activity	Time (Hours)	FY 22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	10	\$117	\$1,170
Eddie Yu (Civil Engineer II)	15	\$78	\$1,170
TOTAL			\$2,340

FY 23/24 Estimated Costs: Union City anticipates expending costs to develop a bid package to install trash capture devices (“TCDs”) to meet the increased trash load reduction benchmarks. Additionally, the engineer’s estimate for installation of the TCDs is \$250,000 for FY 23/24 (this is 1/4 of estimated costs for purchase and installation of new TCDs to comply with this requirement which the City anticipates will take four years to complete). Additionally, I anticipate staff costs to include working with a consultant to finalize a report regarding the effort needed to achieve 100% load reduction, staff support for installation of TCDs and work with City attorney office to explore ability to install TCDs on private property (see Provision C.10.a.ii, discussed below).

FY23/24 Provision C.10.a.i. Estimated Costs			
Develop Bid Package			
Staff Costs	Time (Hours)	FY23/24 Rate/Hour	Cost
Eddie Yu (Civil Engineer II)	80	78	\$6,240

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Azim)

Install TCDs			
Install TCDs to meet new benchmarks under Provision C.10.a.i.			\$250,000
TOTAL			\$256,240

(2) If 90% benchmark is not attained by June 30, 2023, submit revised trash load reduction plan and implementation schedule of additional trash load reduction control actions to achieve 90% and 100% benchmarks by June 30, 2023 and June 30, 2025 (Provision C.10.a.i.).

FY 22/23 Actual Costs: The City used consultant Schaaf & Wheeler to perform this activity as the benchmark was not achieved. The following costs in FY 22/23 are associated with this requirement.

FY 22/23 Provision C.10.a.i. Actual Costs			
Consultant/Person	Time (Hours)	FY22/23 Rate/Hour	Cost
Schaaf & Wheeler (Exhibit 1)	n/a	n/a	\$13,458 ¹
Farooq Azim (City Engineer)	10	\$117	\$1,170
Eddie Yu (Civil Engineer II)	15	\$78	\$1,170
TOTAL			\$15,798

FY 23/24 Costs: The City paid the remainder of the Schaaf & Wheeler contract in FY 23/24.

FY Provision C.10.a.i. 23/24 Costs			
Consultant			Cost
Schaaf & Wheeler (Exhibit 1)	n/a	n/a	\$16,452
TOTAL			\$16,452

(3) New Requirements. Provision C.10.a.ii requires that Permittees ensure that private lands that are moderate, high, or very high trash generating, and that drain to storm drain inlets that Permittees do not own or operate (private), but that are plumbed to Permittees' storm drain systems are equipped with full trash capture systems or are managed with

¹ The Schaaf & Wheeler contract amount is for \$29,910. The remainder was paid in FY 23/24.

1 trash discharge control actions equivalent to or better than full trash capture
2 systems by July 1, 2025.

3 **FY 22/23 Actual Costs:** City staff attended the Program’s Trash
4 Subcommittee meetings in FY 22/23. There were four 2-hour quarterly
5 meetings in FY 22/23, with approximately 12.5% of time spent on Provision
6 C.10.a (or 1 hour).

FY22/23 Provision C.10.a.ii Actual Costs			
Person	Time (Hours)	FY 22/23 Rate/Hour	Cost
Mark Camfield (Public Works Superintendent)	1	\$117	\$117
Paul Roman (Streets Supervisor)	1	\$93	\$93
TOTAL			\$210

12 **FY 23/24 Estimated Costs:** To date in FY 23/24, Union City has not attended
13 the Program’s Trash Subcommittee meetings, but I anticipate there will be
14 two additional 2-hour quarterly meetings in FY 23/24, with approximately
15 12.5% of the time spent on Provision C.10.a.ii.

FY23/24 Provision C.10.a.ii Estimated Costs			
Person	Time (Hours)	FY 23/24 Rate/Hour	Cost
Public Works Superintendent	0.5	\$117	\$59
Paul Roman (Streets Supervisor)	0.5	\$93	\$47
TOTAL			\$106

20 ii. New Requirements. Provision C.10.e of the MRP3
21 requires Permittees to:

22 (1) Use an approved Trash Impracticability Report
23 in developing updated Trash Load Reduction Work Plans (Provisions C.10.d,
24 C.10.e.iv).

25 **FY 22/23 Actual Costs:** The City engaged in planning activities with the
26 Program regarding the new Provision C.10.e requirements. Additionally, City
27 staff attended the Program’s Trash Subcommittee meetings in FY 22/23.

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Azim)

1 There were four 2-hour quarterly meetings in FY 22/23, with approximately
 2 12.5% of time spent on Provision C.10.e (or 1 hour).

FY 22/23 Provision C.10.e Actual Costs			
Person	Time (Hours)	Fy22/23 Rate/Hour	Cost
Farooq Azim (City Engineer)	0.25	\$117	\$29
Tommy Cho (Principal Civil Engineer)	0.25	\$103	\$26
Mark Camfield (Meeting Attendance)	1	\$117	\$117
Paul Roman (Meeting Attendance)	1	\$93	\$93
TOTAL			\$265

8 **FY 23/24 Estimated Costs:** To date in FY 23/24, Union City has not attended
 9 the Program’s Trash Subcommittee meetings, but I anticipate there will be
 10 two additional 2-hour quarterly meetings in FY 23/24, with approximately
 11 12.5% of the time spent on Provision C.10.e.

FY23/24 Provision C.10.e Estimated Costs			
Person	Time (Hours)	FY23/24 Rate/Hour	Cost
Public Works Superintendent	0.5	\$117	\$59
Paul Roman (Streets Supervisor)	0.5	\$93	\$47
TOTAL			\$106

17 (e) Mercury Controls

18 i. Modified Higher Levels of Service Requirements.

19 Provision C.11.c of the MRP3 requires Permittees to implement or cause to be
 20 implemented treatment control measures to treat old industrial land use at
 21 70% efficiency, or by demonstrating an equivalent mercury load reduction.

22 (f) PCB Controls

23 i. Modified Higher Levels of Service Requirements.

24 Provision C.12.a of the MRP3 requires Permittees to quantify the PCBs load
 25 reductions achieved through all the pollution prevention, source control, green
 26 stormwater infrastructure, and other treatment control measures and submit
 27 documentation annually confirming that all control measures effectuated
 28 during the previous Permit term for which PCB load reduction credit was

1 recognized continue to be implemented at an intensity sufficient to maintain
 2 the credited load reduction.

3 ii. Modified Higher Levels of Service Requirements.

4 Provision C.12.c of the MRP3 requires Permittees to implement or cause to be
 5 implemented treatment control measures to treat old industrial land use at
 6 70% efficiency, or by demonstrating an equivalent PCBs load reduction.

7 **FY 22/23 Actual Costs:** The City engaged in planning activities with the
 8 Program regarding the new Provision C.11 and C.12 requirements described
 9 above as follows. According to the MRP3 Fact Sheet, “Because PCBs are more
 10 concentrated in some locations, the choice of where to implement control
 11 measures may be more influenced by known areas of PCBs contamination.
 12 However, the mercury removal benefit can be an important contribution to
 13 overall mercury load reductions, and available data indicate that this strategy
 14 of focusing on PCBs will yield mercury load reductions in many
 15 circumstances.” (MRP3 at A-255 [Section 7 p. S7-0514].) Thus, as planning
 16 was conducted concurrently on these requirements, the time cannot be
 17 separated by provision.

FY 22/23 Provisions C.11., C.12.a C.12.c Actual Costs			
Person/Activity	Time (Hours)	FY22/33 Rate/Hour	Cost
Farooq Azim (City Engineer)	1.5	\$117	\$176
Tommy Cho (Principal Civil Engineer)	1.5	\$103	\$155
TOTAL			\$331

22 **FY 22/23 Estimated Costs:** The City anticipates engaging in planning
 23 activities with the Program regarding the new Provision C.11 and C.12
 24 requirements described above as follows in FY 23/24. According to the MRP3
 25 Fact Sheet, “Because PCBs are more concentrated in some locations, the choice
 26 of where to implement control measures may be more influenced by known
 27 areas of PCBs contamination. However, the mercury removal benefit can be
 28 an important contribution to overall mercury load reductions, and available

1 data indicate that this strategy of focusing on PCBs will yield mercury load
2 reductions in many circumstances.” (MRP3 at A-255 [Section 7 p. S7-0514].)
3 Thus, as planning was conducted concurrently on these requirements, the time
4 cannot be separated by provision.

FY 23/24 Provisions C.11.a, C.12.a C.12.c Estimated Costs			
Person/Activity	Time (Hours)	FY23/24 Rate/Hour	Cost
Farooq Azim (City Engineer)	1.5	\$129	\$194
Tommy Cho (Principal Civil Engineer)	1.5	\$111	\$167
TOTAL			\$361

9
10 (g) Discharges Associated with Unsheltered Homeless
11 Populations (see Mathews Declaration).

12 i. New Requirements. Provision C.17.a of the MRP3
13 requires Permittees to collectively develop and submit a best management
14 practice report that identifies practices to address non-storm water discharges
15 associated with unsheltered homeless populations into MS4s that impact
16 water quality and specific milestones for reducing such discharges. Permittees
17 are required to develop and submit a regional best management practice
18 report to identify control measures to address non-stormwater discharges
19 associated with unsheltered homeless populations and identify milestones to
20 reduce such discharges. To meet this new MRP3 requirement, the Program
21 collaborated with the other four countywide programs on a regional project to
22 develop the required best management practice report, which was submitted
23 with each Permittee’s Fiscal Year 22/23 annual report. (See Mathews Decl.,
24 ¶9.j.) Additionally, each Permittee is required to submit a map identifying,
25 the approximate locations of unsheltered homeless populations, including
26 encampments and other areas where other unsheltered homeless people live
27 relative to storm drains, creeks, and flood control channels. To support its
28 members, the Program worked with County officials to obtain the required

1 geo-located point in time count data, developed an approach for creating the
 2 maps, and updated its GIS system to produce the required maps for each of its
 3 members. (See *id.*) The City submitted the maps identifying, the approximate
 4 locations of unsheltered homeless populations, including encampments and
 5 other areas where other unsheltered homeless people live relative to storm
 6 drains, creeks, and flood control channels, with its FY 22/23 annual report.

FY 22/23 Provision C.17.a Actual Costs			
Person/Activity	Time (Hours)	FY22/33 Rate/Hour	Cost
Jesus Garcia (Homeless Prog. Coordinator)	3	\$75	\$225
TOTAL			\$225

11 ii. The City will incur additional costs throughout the
 12 MRP3 term to implement the best management practices.

13 (h) Cost Reporting (see Mathews Declaration).

14 i. New Requirements. Provision C.20.b of the MRP3
 15 requires Permittees to develop a cost reporting framework and methodology to
 16 perform an annual fiscal analysis. Permittees are encouraged to
 17 collaboratively develop the framework and methodology for purposes of
 18 efficiency, cost-savings, and regionwide consistency and comparability. The
 19 framework shall consider identification of costs incurred solely to comply with
 20 the Permit’s requirements as listed in Provision C.20.b.(iii) as compared to
 21 costs shared with other programs or regulatory requirements, provide
 22 meaningful data to assess costs of different program areas, and allow for
 23 comparisons and to identify trends over time. The City had no actual costs for
 24 FY22/23 but the Program did have actual costs inn FY22/23. As set forth in
 25 paragraph 10 the Mathews Declaration, the City’s share of these costs
 26 \$2,877.86. In FY 23/24, I anticipate attending the Program’s training for
 27
 28

1 Provision C.20.b for two hours at a \$119 per hour for a total of \$238; therefore,
2 these are estimated costs FY for 23/24.

3 (i) Asset Management (see Mathews Declaration).

4 i. Requirements. Under C.21.b, Permittees must
5 develop and implement an asset management plan to ensure the satisfactory
6 condition of all hard assets constructed during this and Previous Permit terms
7 pursuant to Provisions C.2, C.3, C.10, C.11, C.12, C.13, C.14, C.17, C.18, and
8 C.19. In addition to the City's share of Program costs in the Mathews
9 Declaration, in FY 23-24 the Program is convening an Asset Management
10 Workgroup to develop framework outline and draft asset management
11 framework methodology. Four Program workgroup meetings, likely one hour
12 each, and three regional meetings to discuss consistent approaches for aspects
13 of the plans are anticipated. The City may participate in these meetings.

14 9. Continuing Requirements from the MRP1 and MRP2 Test Claims

15 The requirements below were raised in our MRP1 and MRP2 test
16 claims, which are currently pending before the Commission, and are
17 continuing in the MRP3.

18 (a) Permittees were required to implement a number of water
19 quality monitoring programs under Provision C.8. These requirements are
20 discussed in our MRP1 test claim, which is currently pending before the
21 Commission. Permittees continue to incur costs necessary to comply with this
22 Provision, as discussed in the Declaration of Sandra Mathews in support of
23 this Test Claim. Costs associated with these continuing activities are
24 contained in the Mathews Declaration in support of this Test Claim.

25 (b) Provision C.10.b. required Permittees to “maintain, and
26 provide for inspection and review upon request, documentation of the design,
27 operation, and maintenance of each of their full trash capture systems,
28 including the mapped location and drainage area served by each system.”

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1 (MRP2 at C.10.b [Section 7 p. S7-1093.]) This provision specified detailed full
 2 trash capture system installation and maintenance instructions. Provision
 3 C.10.b. in the MRP2 required increased activities by Union City that are best
 4 characterized as a higher level of service in comparison to the MRP1. MRP3
 5 continues these requirements. Additionally, Provision C.10.a of the MRP2
 6 required 70% trash load reduction by July 1, 2017, and 80% by July 1, 2019.
 7 (MRP2 at C.10.a [Section 7 p. S7-1091].) Continuing costs associated with
 8 these requirements include maintenance of trash capture devices and
 9 maintenance and parts associated with the City’s existing three sweepers as
 10 summarized as follows:

FY22/23 Continuing Costs			
Activity	Rate x Est. Hours/Year	Hours x Cost per Hour	Costs (Exhibit 1)
Trash Capture Device Maintenance			
Maintenance Crew 1	\$45 x 17		\$765
Maintenance Crew 2	\$40 x 37		\$1,480
Vacuum Truck		182 x \$237.50	\$43,255
Sweeper Maintenance			\$162,833
Sweeper Parts			\$7,076
TOTAL			\$215,409

18 (c) Provision C.11.b. required Permittees “to develop and
 19 implement an assessment methodology and data collection program to
 20 quantify mercury loads reduced through implementation of any and all
 21 pollution prevention, source control and treatment control efforts required by
 22 the provisions of this Permit or load reductions achieved through other
 23 relevant efforts.” (MRP2 at C.11.b [Section 7 p. S7-1259.]) This program is
 24 continuing under Provision C.11.a. of the MRP3.

25 (d) Provision C.11.c. required Permittees to implement green
 26 infrastructure projects during the term of the permit to achieve mercury load
 27 reductions of 48 g/year by June 30, 2020. (MRP2 at C.11.c [Section 7 p. S7-
 28 1103 – S7-1105].) Provision C.11.e of the MRP3 requires Permittees to

1 “implement green stormwater infrastructure (GSI) projects during the term of
2 the Permit consistent with implementing requirements in Provision C.3.j.”
3 (MRP3 C.11-6 [Section 7 p. S7-0161].)

4 (e) Provision C.12.c. required Permittees to “implement green
5 infrastructure projects during the term of the Permit to achieve PCBs load
6 reductions of 120 g/year by June 30, 2020.” (MRP2 at C.12.c [Section 7 p. S7-
7 1273].) Provision C.12.f of the MRP3 requires Permittees to “implement green
8 stormwater infrastructure (GSI) projects during the term of the Permit
9 consistent with implementing requirements in Provision C.3.j.” (MRP3 at
10 C.12-8 [Section 7 p. S7-0172].)

11 Continuing costs associated with requirements C.11.c and C.12.c include
12 maintenance of the Green Street Infrastructure (“GSI”) in the following table.
13 Rates were provided to me by Jesus Banuelos, Public Works Streets
14 Supervisor.

FY22/23 Continuing Costs		
GSI Maintenance by City Maintenance Crews	FY22/23 Rate x Hours/Year	Costs (Indirect)
Maintenance 1 Crew	\$45 x 400	\$18,000
Maintenance 2 Crew	\$40 x 1,200	\$48,000
TOTAL		\$66,000

1 (f) Provision C.12.d. required Permittees to “prepare a plan and
2 schedule for PCBs control measure implementation and corresponding
3 reasonable assurance analysis to quantitatively demonstrate that sufficient
4 control measures will be implemented to attain the PCBs TMDL wasteload
5 allocations.” (MRP2 at C.12.d [Section 7 p. S7-1273.] In 2020, Permittees
6 submitted a Reasonable Assurance Analysis and plan (“RAA”) demonstrating
7 that sufficient control measures will be implemented to attain the PCBs
8 TMDL wasteload allocations by 2030. Provision C.12.h of the MRP3 requires
9 Permittees to “update, as necessary, their PCBs control measures
10 implementation plan and RAA.” (MRP3 at C.12-11 [Section 7 p. S7-0175].)

11 10. As set forth in paragraph 8 above, the total amount of Union City’s
12 actual increased costs for Fiscal Year 22/23 for the new programs or higher
13 levels of service for MRP3 Provisions as set forth in this this Declaration is
14 \$20,971 As set forth in paragraph 8 above and in the Mathews Declaration at
15 paragraph 10, the total amount of Union City’s actual increased costs for
16 Fiscal Year 22/23 for the new programs or higher levels of service for MRP3
17 Provisions MRP3 Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4),
18 C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c,
19 C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b. **\$51,619.**

20 11. As set forth in paragraph 8 above, the total amount of Union City’s
21 estimated costs for Fiscal Year 23/24 for the new programs or higher levels of
22 service for MRP3 Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4),
23 C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c,
24 C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b is \$803,415. As set forth in
25 paragraph 8 above and in the Mathews Declaration at paragraph 13, the total
26 amount of Union City’s estimated increased costs for Fiscal Year 23/24 for the
27 new programs or higher levels of service for MRP3 Provisions MRP3
28 Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j),

1 C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c,
2 C.15.b.iii, C.17.a, C.20.b and C.21.b is **\$852,511**.

3 12. I am confident from my own knowledge of the MRP3, MRP2 and
4 MRP1 and the City's stormwater program that the actual and/or estimated
5 costs resulting from the MRP3 mandates at issue in this Test Claim will
6 exceed one thousand dollars (\$1,000). All costs identified in this Declaration
7 as incurring in FY 22/23 were incurred after the effective date of the MRP3
8 (July 1, 2022).

9 13. I am not aware of any state or federal funds that will be available
10 to pay for these increased costs.

11 14. I am not aware of any other local or non-local agency funds that
12 are or will be available to pay for these increased costs. The City has a Clean
13 Water Fund, which obtains revenue from property tax assessments, and is
14 supplanted by the General Funds. The salaries and benefits identified in this
15 Declaration are paid from general funds, which include the City's General
16 Fund and the Clean Water Fund. The other costs identified in this
17 Declaration are funded by the City's General Fund and the Clean Water Fund.
18 The City's share of the Program's costs as identified in the Declaration of
19 Sandra Mathews are funded by the Clean Water Fund. The City has no
20 authority to increase these revenue sources without complying with
21 Proposition 218. Thus, the City does not have authority to increase these fees
22 – only the voters have that authority. Furthermore, the money from the Clean
23 Water Fund is already consumed by existing stormwater compliance costs and
24 is insufficient to cover increased activities required by the MRP3.

25 15. The City is not confident that it will be able to avail itself of future
26 grant opportunities. The City has no grant applications pending for the
27 stormwater program. Furthermore, multiple jurisdictions must compete for
28 limited funding sources, creating stiff competition among municipalities.

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16. I have personally reviewed the costs provided in this Declaration and I am satisfied that the information is accurate and was correctly compiled according to my instructions.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.

Executed on May 20, 2024, at Union City, California.



Farooq Azim

5721830.3

EXHIBIT 1
to Section 6.1
(Azim Dec)

**CONSULTING SERVICES AGREEMENT BETWEEN
THE CITY OF UNION CITY
AND
SCHAAF AND WHEELER
FOR
UNION CITY TRASH CAPTURE FEASIBILITY STUDY, CITY PROJECT NO. 23-22**

This Agreement for consulting services is made by and between the City of Union City, a municipal corporation, (“City”) and **Schaaf & Wheeler** a California corporation, with offices located at 4699 Old Ironside Dr., Suite 350 Santa Clara, CA 95054 (“Consultant”), (together referred to as the “Parties”) as of March 24, 2023 (the “Effective Date”).

Section 1. Services. Subject to the terms and conditions set forth in this Agreement, Consultant shall provide to City the services described in the Scope of Work attached as Exhibit A and incorporated herein, at the time and place and in the manner specified therein. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit A, the Agreement shall prevail.

1.1 Term of Services. The term of this Agreement shall begin on the Effective Date and shall end on March 24, 2024, and Consultant shall complete the work described in Exhibit A on or before that date, unless the term of the Agreement is otherwise terminated or extended, as provided for in Section 8. The time provided to Consultant to complete the services required by this Agreement shall not affect the City’s right to terminate the Agreement, as referenced in Section 8.

1.2 Standard of Performance. Consultant shall perform all services required pursuant to this Agreement according to the standards observed by a competent practitioner of the profession in which Consultant is engaged.

1.3 Assignment of Personnel. Consultant shall assign only competent personnel to perform services pursuant to this Agreement. In the event that City, in its sole discretion, at any time during the term of this Agreement, desires the reassignment of any such persons, Consultant shall, immediately upon receiving notice from City of such desire of City, reassign such person or persons.

1.4 Time is of the Essence. Time is of the essence. Consultant shall devote such time to the performance of services pursuant to this Agreement as may be reasonably necessary to timely finish the Scope of Work, to meet the standard of performance provided in Section 1.1 above and to satisfy Consultant’s obligations hereunder.

1.5 Public Works Requirements. Because the services described in Exhibit A constitute a public works within the definition of Section 1720(a)(1) of the California Labor Code. As a result, Consultant is required to comply with the provisions of the Labor Code applicable to public works, to the extent set forth in Exhibit B. Consultant shall waive, indemnify, hold harmless, and defend City concerning any liability arising out of Labor Code Section 1720 *et seq.*

Section 2. COMPENSATION. City hereby agrees to pay Consultant a sum not to exceed **Twenty-Nine Thousand Nine Hundred and Ten Dollars (\$29,910)**, notwithstanding any contrary indications that may be contained in Consultant’s proposal for services to be performed and reimbursable costs incurred under this Agreement. In the event of a conflict between this Agreement and Consultant’s proposal, attached as Exhibit A, regarding the amount of compensation, the

Agreement shall prevail. City shall pay Consultant for services rendered pursuant to this Agreement at the time and in the manner set forth herein. The payments specified below shall be the only payments from City to Consultant for services rendered pursuant to this Agreement. Consultant shall submit all invoices to City in the manner specified herein. Except as specifically authorized by City in writing, Consultant shall not bill City for duplicate services performed by more than one person.

Consultant and City acknowledge and agree that compensation paid by City to Consultant under this Agreement is based upon Consultant's estimated costs of providing the services required hereunder, including salaries and benefits of employees and subcontractors of Consultant. Consequently, the parties further agree that compensation hereunder is intended to include the costs of contributions to any pensions and/or annuities to which Consultant and its employees, agents, and subcontractors may be eligible. City therefore has no responsibility for such contributions beyond compensation required under this Agreement.

2.1 Invoices. Consultant shall submit invoices, not more often than once a month during the term of this Agreement, based on the cost for services performed and reimbursable costs incurred prior to the invoice date. Invoices shall contain the following information:

- Serial identifications of progress bills; i.e., Progress Bill No. 1 for the first invoice, etc.;
- Project name & number if applicable;
- Purchase Order number to expedite payment;
- The beginning and ending dates of the billing period;
- A task summary containing the original contract amount, the amount of prior billings, the total due this period, the balance available under the Agreement, and the percentage of completion;
- At City's option, for each work item in each task, a copy of the applicable time entries or time sheets shall be submitted showing the name of the person doing the work, the hours spent by each person, a brief description of the work, and each reimbursable expense;
- The total number of hours of work performed under the Agreement by Consultant and each employee, agent, and subcontractor of Consultant performing services hereunder;
- The Consultant's signature;

2.2 Monthly Payment. City shall make monthly payments, based on invoices received, for services satisfactorily performed, and for authorized reimbursable costs incurred. City shall have 30 days from the receipt of an invoice that complies with all of the requirements above to pay Consultant.

2.3 Final Payment. N/A

2.4 Total Payment. City shall pay for the services to be rendered by Consultant pursuant to this Agreement. City shall not pay any additional sum for any expense or cost whatsoever incurred

by Consultant in rendering services pursuant to this Agreement. City shall make no payment for any extra, further, or additional service pursuant to this Agreement.

In no event shall Consultant submit any invoice for an amount in excess of the maximum amount of compensation provided above either for a task or for the entire Agreement, unless the Agreement is modified prior to the submission of such an invoice by a properly executed change order or amendment.

2.5 Hourly Rate/Fees. Unless the services provided are for a lump sum or flat fee, fees for work performed by Consultant on an hourly basis shall not exceed the amounts shown on the compensation cost proposal attached hereto as Exhibit A. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit A, the Agreement shall prevail.

2.6 Reimbursable Expenses. Reimbursable expenses are specified in Exhibit A, attached hereto and incorporated herein. Reimbursable expenses not listed in Exhibit A are not chargeable to City. Reimbursable expenses shall not include a mark-up and are billed as a direct costs. In no event shall expenses be advanced by the City to the Consultant. Reimbursable expenses are included in the total amount of compensation provided under this Agreement that shall not be exceeded.

2.7 Payment of Taxes. Consultant is solely responsible for the payment of employment taxes incurred under this Agreement and any similar federal or state taxes.

2.8 Payment upon Termination. In the event that the City or Consultant terminates this Agreement pursuant to Section 8, the City shall compensate the Consultant for all outstanding costs and reimbursable expenses incurred for work satisfactorily completed as of the date of written notice of termination. Consultant shall maintain adequate logs and timesheets to verify costs incurred to that date.

2.9 Authorization to Perform Services. The Consultant is not authorized to perform any services or incur any costs whatsoever under the terms of this Agreement until receipt of authorization from the Contract Administrator.

2.10. Business License. The Consultant is not authorized to perform services or incur costs whatsoever under the terms of this Agreement until Consultant applies for and has been issued a business license from the City pursuant to Title 5 of the Union City Municipal Code.

Section 3. FACILITIES AND EQUIPMENT. Except as set forth herein, Consultant shall, at its sole cost and expense, provide all facilities and equipment that may be necessary to perform the services required by this Agreement. City shall make available to Consultant only the facilities and equipment listed in this section, and only under the terms and conditions set forth herein.

City shall furnish physical facilities such as desks, filing cabinets, and conference space, as may be reasonably necessary for Consultant's use while consulting with City employees and reviewing records and the information in possession of the City. The location, quantity, and time of furnishing those facilities shall be in the sole discretion of City. In no event shall City be obligated to furnish any facility that may involve incurring any direct expense, including but not limited to computer, long-distance telephone or other communication charges, vehicles, and reproduction facilities.

Section 4. INSURANCE REQUIREMENTS. Before beginning any work under this Agreement, Consultant, at its own cost and expense, unless otherwise specified below, shall procure the types and amounts of insurance listed below against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Consultant and its agents, representatives, employees, and subcontractors. Consistent with the following provisions, Consultant shall provide proof satisfactory to City of such insurance that meets the requirements of this section and under forms of insurance satisfactory in all respects, and that such insurance is in effect prior to beginning work to the City. Consultant shall maintain the insurance policies required by this section throughout the term of this Agreement. The cost of such insurance shall be included in the Consultant's bid. Consultant shall not allow any subcontractor to commence work on any subcontract until Consultant has obtained all insurance required herein for the subcontractor(s) and provided evidence that such insurance is in effect to City. Verification of the required insurance shall be submitted and made part of this Agreement prior to execution.

4.1 Required Coverage. Consultant shall maintain all required insurance listed herein for the duration of this Agreement.

<u>COVERAGE</u>	<u>TYPE OF INSURANCE</u>	<u>MINIMUM LIMITS</u>
A	Commercial Liability Premises Liability; Products and Completed Operations; Contractual Liability; Personal Injury and Advertising Liability	General \$1,000,000 per occurrence; Bodily Injury and Property Damage \$2,000,00 in the aggregate; Commercial general coverage shall be at least as broad as Insurance Services Office Commercial General Liability occurrence form CG 0001 (most recent edition) covering comprehensive General Liability on an "occurrence" basis
B	Commercial or Business Automobile Liability All owned vehicles, hired or leased vehicles, non-owned, borrowed and permissive uses. Personal Automobile Liability is acceptable for individual contractors with no transportation or hauling related activities	\$1,000,000 per occurrence; Any Auto; Bodily Injury and Property Damage. Automobile coverage shall be at least as broad as Insurance Services Office Automobile Liability form CA 0001 (most recent edition), Code 1 (any auto). No endorsement shall be attached limiting the coverage.
C	Workers' Compensation (WC) and Employers Liability (EL) Required for all contractors with employees	WC: Statutory Limits EL: \$100,000 per accident for bodily injury or disease. Consultant may rely on a self-insurance program to meet

D	<p>Professional Liability/Errors & Omissions Includes endorsements of contractual liability</p>	<p>those requirements, but only if the program of self-insurance complies fully with the provisions of the California Labor Code. The insurer shall waive all rights of subrogation against the City and its officers, officials, employees, and volunteers for loss arising from work performed under this Agreement</p> <p>\$1,000,000 per occurrence \$2,000,000 policy aggregate; Any deductible or self-insured retention shall not exceed \$150,000 per claim</p>
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4.2 Additional requirements. Each of the following shall be included in the insurance coverage or added as a certified endorsement to the policy:

a. All required insurance shall be maintained during the entire term of the Agreement with the following exception: Insurance policies and coverage(s) written on a claims-made basis shall be maintained during the entire term of the Agreement and until three (3) years following termination and acceptance of all work provided under the Agreement, with the retroactive date of said insurance (as may be applicable) concurrent with the commencement of activities pursuant to this Agreement

b. All insurance required above with the exception of Professional Liability, Personal Automobile Liability, Workers' Compensation and Employers Liability, shall be endorsed to name as additional insured: City of Union City, its City Council, and all City officers, agents, employees, volunteers and representatives.

c. For any claims related to this Agreement or the work hereunder, the Consultant's insurance covered shall be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

d. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after 30 days' prior written notice has been provided to the City.

e. **Certificates of Insurance:** Before commencing operations under this Agreement, Consultant shall provide Certificate(s) of Insurance and applicable insurance endorsements, in form and satisfactory to City, evidencing that all required insurance coverage is in effect. The City reserves the rights to require the Consultant to provide complete, certified copies of all required insurance policies.

f. **Subcontractors:** Consultant shall include all subcontractors as an insured (covered party) under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

g. **Claims-made limitations.** The following provisions shall apply if the professional liability coverage is written on a claims-made form:

i. The retroactive date of the policy must be shown and must be before the date of the Agreement.

ii. Insurance must be maintained and evidence of insurance must be provided for at least five years after completion of the Agreement or the work, so long as commercially available at reasonable rates.

iii. If coverage is canceled or not renewed and it is not replaced with another claims-made policy form with a retroactive date that precedes the date of this Agreement, Consultant must purchase an extended period coverage for a minimum of three (3) years after completion of work under this Agreement.

iv. A copy of the claim reporting requirements must be submitted to the City for review prior to the commencement of any work under this Agreement.

4.3 All Policies Requirements.

a. **Acceptability of insurers.** All insurance required by this section is to be placed with insurers with a Bests' rating of no less than A:VII. Insurance shall be maintained through an insurer with a minimum A.M. Best Rating of A- or better, with deductible amounts acceptable to the City. Acceptance of Consultant's insurance by City shall not relieve or decrease the liability of Consultant hereunder. Any deductible or self-insured retention amount or other similar obligation under the policies shall be the sole responsibility of the Consultant.

b. **Deductibles and Self-Insured Retentions.** Consultant shall disclose to and obtain the written approval of City for the self-insured retentions and deductibles before beginning any of the services or work called for by any term of this Agreement. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, employees, and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

c. **Wasting Policies.** No policy required by this Section 4 shall include a "wasting" policy limit (i.e. limit that is eroded by the cost of defense).

d. **Waiver of Subrogation.** Consultant hereby agrees to waive subrogation which any insurer or contractor may require from vendor by virtue of the payment of any loss. Consultant agrees to obtain any endorsements that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the entity for all work performed by the consultant, its employees, agents, and subcontractors.

4.4 Remedies. In addition to any other remedies City may have if Consultant fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option exercise any of the following remedies, which are alternatives to other remedies City may have and are not the exclusive remedy for Consultant's breach:

- Obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under the Agreement;
- Order Consultant to stop work under this Agreement or withhold any payment that becomes due to Consultant hereunder, or both stop work and withhold any payment, until Consultant demonstrates compliance with the requirements hereof; and/or
- Terminate this Agreement.

Section 5. INDEMNIFICATION AND CONSULTANT'S RESPONSIBILITIES.

Consultant shall indemnify, defend with counsel acceptable to City, and hold harmless City and its officers, officials, employees, agents and volunteers from and against any and all liability, loss, damage, claims, expenses, and costs (including without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature arising out of or in connection with Consultant's performance of the Services or its failure to comply with any of its obligations contained in this Agreement, except such Liability caused by the sole negligence or willful misconduct of City.

The Consultant's obligation to defend and indemnify shall not be excused because of the Consultant's inability to evaluate Liability or because the Consultant evaluates Liability and determines that the Consultant is not liable to the claimant. The Consultant must respond within 30 days, to the tender of any claim for defense and indemnity by the City, unless this time has been extended by the City. If the Consultant fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, so much of the money due the Consultant under and by virtue of this Agreement as shall reasonably be considered necessary by the City, may be retained by the City until disposition has been made of the claim or suit for damages, or until the Consultant accepts or rejects the tender of defense, whichever occurs first.

With respect to third party claims against the Consultant, the Consultant waives any and all rights of any type to express or implied indemnity against the Indemnitees.

Notwithstanding the forgoing, to the extent this Agreement is a "construction contract" as defined by California Civil Code Section 2782, as may be amended from time to time, such duties of consultant to indemnify shall not apply when to do so would be prohibited by California Civil Code Section 2782.

In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Section 6. STATUS OF CONSULTANT.

6.1 Independent Contractor. At all times during the term of this Agreement, Consultant shall be an independent contractor and shall not be an employee of City. City shall have the right to control Consultant only insofar as the results of Consultant's services rendered pursuant to this Agreement and assignment of personnel pursuant to Subparagraph 1.3; however, otherwise City shall not have the right to control the means by which Consultant accomplishes services rendered pursuant to this Agreement. Notwithstanding any other City, state, or federal policy, rule, regulation, law, or ordinance to the contrary, Consultant and any of its employees, agents, and subcontractors providing services under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any and all claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in the California Public Employees Retirement System (PERS) as an employee of City and entitlement to any contribution to be paid by City for employer contributions and/or employee contributions for PERS benefits.

6.2 Consultant Not an Agent. Except as City may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.

Section 7. LEGAL REQUIREMENTS.

7.1 Governing Law. The laws of the State of California shall govern this Agreement.

7.2 Compliance with Applicable Laws. Consultant and any subcontractors shall comply with all laws applicable to the performance of the work hereunder.

7.3 Other Governmental Regulations. To the extent that this Agreement may be funded by fiscal assistance from another governmental entity, Consultant and any subcontractors shall comply with all applicable rules and regulations to which City is bound by the terms of such fiscal assistance program.

7.4 Licenses and Permits. Consultant represents and warrants to City that Consultant and its employees, agents, and any subcontractors have all licenses, permits, qualifications, and approvals of whatsoever nature that are legally required to practice their respective professions. Consultant represents and warrants to City that Consultant and its employees, agents, any subcontractors shall, at their sole cost and expense, keep in effect at all times during the term of this Agreement any licenses, permits, and approvals that are legally required to practice their respective professions. In addition to the foregoing, Consultant and any subcontractors shall obtain and maintain during the term of this Agreement valid Business Licenses from City.

7.5 Nondiscrimination and Equal Opportunity. Consultant shall not discriminate, on the basis of a person's race, religion, color, national origin, age, physical or mental handicap or disability, medical condition, marital status, sex, or sexual orientation, against any employee, applicant for employment, subcontractor, bidder for a subcontract, or participant in, recipient of, or applicant for any services or programs provided by Consultant under this Agreement. Consultant shall comply with all applicable federal, state, and local laws, policies, rules, and requirements related to equal opportunity and nondiscrimination in employment, contracting, and the provision of any services that are the subject of this Agreement, including but not limited to the satisfaction of any positive obligations required of Consultant thereby.

Consultant shall include the provisions of this Subsection in any subcontract approved by the Contract Administrator or this Agreement.

Section 8. TERMINATION AND MODIFICATION.

8.1 Termination. City may cancel this Agreement at any time and without cause upon written notification to Consultant. Consultant may cancel this Agreement upon thirty (30) days' written notice to City and shall include in such notice the reasons for cancellation.

In the event of termination, Consultant shall be entitled to compensation for services performed to the effective date of termination; City, however, may condition payment of such compensation upon Consultant delivering to City any or all work product, including, but not limited to documents, photographs, computer software, video and audio tapes, and other materials provided to Consultant or prepared by or for Consultant or the City in connection with this Agreement.

8.2 Extension. City may, in its sole and exclusive discretion, extend the end date of this Agreement beyond that provided for in Subsection 1.1. Any such extension shall require a written amendment to this Agreement, as provided for herein.

8.3 Amendments. The parties may amend this Agreement only by a writing signed by all the parties.

8.4 Assignment and Subcontracting. City and Consultant recognize and agree that this Agreement contemplates personal performance by Consultant and is based upon a determination of Consultant's unique personal competence, experience, and specialized personal knowledge. Moreover, a substantial inducement to City for entering into this Agreement was and is the professional reputation and competence of Consultant. Consultant may not assign this Agreement or any interest therein without the prior written approval of the Contract Administrator. Consultant shall not subcontract any portion of the performance contemplated and provided for herein, other than to the subcontractors noted in the proposal, without prior written approval of the Contract Administrator.

8.5 Survival. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating liability between City and Consultant shall survive the termination of this Agreement.

8.6 Options upon Breach by Consultant. If Consultant materially breaches any of the terms of this Agreement, City's remedies shall include, but not be limited to, the following:

8.6.1 Immediately terminate the Agreement;

8.6.2 Retain the plans, specifications, drawings, reports, design documents, and any other work product prepared by Consultant pursuant to this Agreement;

8.6.3 Retain a different consultant to complete the work described in Exhibit A not finished by Consultant; or

8.6.4 Charge Consultant the difference between the cost to complete the work described in Exhibit A that is unfinished at the time of breach and the amount that City would have paid Consultant pursuant to Section 2 if Consultant had completed the work.

Section 9. KEEPING AND STATUS OF RECORDS.

9.1 Records Created as Part of Consultant's Performance. All reports, data, maps, models, charts, studies, surveys, photographs, memoranda, plans, studies, specifications, records, files, or any other documents or materials, in electronic or any other form, that Consultant prepares or obtains pursuant to this Agreement and that relate to the matters covered hereunder shall be the property of the City. Consultant hereby agrees to deliver those documents to the City upon termination of the Agreement. It is understood and agreed that the documents and other materials, including but not limited to those described above, prepared pursuant to this Agreement are prepared specifically for the City and are not necessarily suitable for any future or other use. City and Consultant agree that, until final approval by City, all data, plans, specifications, reports and other documents are confidential and will not be released to third parties without prior written consent of both parties.

9.2 Consultant's Books and Records. Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services or expenditures and disbursements charged to the City under this Agreement for a minimum of 3 years, or for any longer period required by law, from the date of final payment to the Consultant to this Agreement.

9.3 Inspection and Audit of Records. Any records or documents that Section 9.2 of this Agreement requires Consultant to maintain shall be made available for inspection, audit, and/or copying at any time during regular business hours, upon oral or written request of the City. Under California Government Code Section 8546.7, if the amount of public funds expended under this Agreement exceeds \$10,000.00, the Agreement shall be subject to the examination and audit of the State Auditor, at the request of City or as part of any audit of the City, for a period of 3 years after final payment under the Agreement.

Section 10 MISCELLANEOUS PROVISIONS.

10.1 Attorneys' Fees. If a party to this Agreement brings any action, including an action for declaratory relief, to enforce or interpret the provision of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which that party may be entitled. The court may set such fees in the same action or in a separate action brought for that purpose.

10.2 Venue. In the event that either party brings any action against the other under this Agreement, the parties agree that trial of such action shall be vested exclusively in the state courts of California in the County of Alameda or in the United States District Court for the Northern District of California.

10.3 Severability. If a court of competent jurisdiction finds or rules that any provision of this Agreement is invalid, void, or unenforceable, the provisions of this Agreement not so adjudged shall remain in full force and effect. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.

10.4 No Implied Waiver of Breach. The waiver of any breach of a specific provision of this Agreement does not constitute a waiver of any other breach of that term or any other term of this Agreement.

10.5 Successors and Assigns. The provisions of this Agreement shall inure to the benefit of and shall apply to and bind the successors and assigns of the parties.

10.6 Use of Recycled Products. Consultant shall prepare and submit all reports, written studies and other printed material on recycled paper to the extent it is available at equal or less cost than virgin paper.

10.7 Conflict of Interest. Consultant may serve other clients, but none whose activities within the corporate limits of City or whose business, regardless of location, would place Consultant in a "conflict of interest," as that term is defined in the Political Reform Act, codified at California Government Code Section 81000 *et seq.*

Consultant shall not employ any City official in the work performed pursuant to this Agreement. No officer or employee of City shall have any financial interest in this Agreement that would violate California Government Code Sections 1090 *et seq.* Consultant hereby warrants that it is not now, nor has it been in the previous 12 months, an employee, agent, appointee, or official of the City. If Consultant was an employee, agent, appointee, or official of the City in the previous twelve months, Consultant warrants that it did not participate in any manner in the forming of this Agreement. Consultant understands that, if this Agreement is made in violation of Government Code § 1090 *et seq.*, the entire Agreement is void and Consultant will not be entitled to any compensation for services performed pursuant to this Agreement, including reimbursement of expenses, and Consultant will be required to reimburse the City for any sums paid to the Consultant. Consultant understands that, in addition to the foregoing, it may be subject to criminal prosecution for a violation of Government Code § 1090 and, if applicable, will be disqualified from holding public office in the State of California.

10.8 Solicitation. Consultant agrees not to solicit business at any meeting, focus group, or interview related to this Agreement, either orally or through any written materials.

10.9 Contract Administration. This Agreement shall be administered by the City Manager, or his designee, identified as **Marilou Ayupan** ("Contract Administrator"). All correspondence, meeting documentation, invoices and project deliverables shall be directed to or through the Contract Administrator.

Marilou Ayupan, P.E.
Public Works Director
City of Union City
34009 Alvarado-Niles Road
Union City, CA 94587
MarilouA@unioncity.org

10.10 Notices. Any written notice to Consultant shall be sent to:

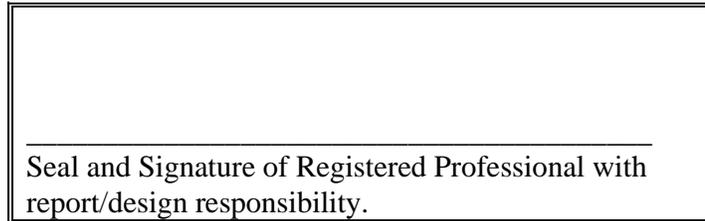
Caitlin Tharp, PE
Vice President
Schaaf and Wheeler Consulting Civil Engineers
10232 Donner Pass Road #4, Truckee, CA 96161
CTharp@swsv.com

All other written notices to City shall be sent to:

Joan M. Malloy
City Manager
City of Union City
34009 Alvarado Niles Rd. with a copy to
Union City, CA 94587

Kristopher J. Kokotaylo,
City Attorney
City of Union City
34009 Alvarado Niles Rd.
Union City, CA 94587

10.12 Professional Seal. Where applicable in the determination of the contract administrator, the first page of a technical report, first page of design specifications, and each page of construction drawings shall be stamped/sealed and signed by the licensed professional responsible for the report/design preparation. The stamp/seal shall be in a block entitled "Seal and Signature of Registered Professional with report/design responsibility," as in the following example.



10.13 Integration. This Agreement, including the scope of work attached hereto and incorporated herein as Exhibit A represents the entire and integrated agreement between City and Consultant and supersedes all prior negotiations, representations, or agreements, either written or oral.

Exhibit A Schaaf and Wheeler Proposal
Exhibit B Public Works Requirements

10.14 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be an original and all of which together shall constitute one agreement.

SIGNATURES ON FOLLOWING PAGE

The Parties have executed this Agreement as of the Effective Date.

CITY OF UNION CITY

DocuSigned by:
City Manager- Joan Malloy
6A883797FA684C9
JOAN MALLOY, CITY MANAGER

SCHAAF AND WHEELER

Caith Tharp
CAITLIN THARP, VICE PRESIDENT

ATTEST:

DocuSigned by:
Anna Brown
48AF7211F71E45C...
ANNA M. BROWN, CITY CLERK

APPROVED AS TO FORM:

DocuSigned by:
Kristopher J. Kokotaylo
4A33379A6B054E1
KRISTOPHER J. KOKOTAYLO
CITY ATTORNEY

3695229.2
Version 3.2.21

EXHIBIT A

SCHAAF AND WHEELER PROPOSAL



10232 Donner Pass Road, Unit #4
Truckee, CA 96161
(415) 823-4964
ctharp@swsv.com

PROPOSAL MEMO VIA EMAIL

DATE: March 17, 2023
TO: Eddie Yu, City of Union City
FROM: Caitlin Tharp, PE
SUBJECT: Union City Trash Capture Feasibility Study Proposal

Schaaf & Wheeler is providing you with this scope and fee to perform a full trash capture feasibility study for Union City.

Our work will provide the City with a road map to meet the MRP trash capture requirements of 90% by June 30, 2023 and 100% by June 30, 2025. Or, if not feasible, a strategic plan to meet 90% as required by the Water Board.

Schaaf & Wheeler will review the City's existing trash capture devices and identify potential new small-scale and large-scale opportunities utilizing State Approved full trash capture devices.

We understand that the city currently has approximately 72% trash credit through 562 City owned small trash capture device and privately owned treatment devices. The city is currently utilizing offset credits of 10% which will no longer be allowed. Schaaf & Wheeler will prioritize additional small scale trash capture installations to meet the 90% deadline with full capture devices only. Large scale devices will be considered where economically preferable for the 100% goal, or where funding may be available from Caltrans for their installation.

Task 1: Data Collection/Review

Schaaf & Wheeler will review the City's GIS database (assumed to be provided by the City or County) for existing trash devices, storm drain system, storm drain catchments, and trash generation areas.

Task 2: Identify Small and Large Trash Capture Device Opportunities

Schaaf & Wheeler will identify small trash capture device locations to obtain 90% and 100% full trash capture. Large trash capture device alternatives will be reviewed for watersheds which cannot be treated with small devices alone, where Caltrans ROW may be treated and therefore possibly obtain Caltrans construction funding, or where a large device may be more cost effective. Drainage areas to each TCD will be delineated, based on larger storm drain catchments provided by the city. Note, some devices may be identified for private properties in order to obtain the trash capture goals. It may not be feasible to obtain 90% or 100% with trash capture devices on city property alone. This scope assumes a desktop analysis only. It is recommended that the preferred device locations be reviewed in the field for additional feasibility confirmation.

Task 3: Feasibility Study Report

Schaaf & Wheeler will summarize the results of Tasks 1 and 2 in a report. The report will include figures and tables of the recommended device installation locations. Engineer's cost estimates will be included. A schedule for implementation will be included. This assumes one draft and one final version of the report.

Task 4: Strategic Plan to Meet 90% Goal

If the City is unable to meet the 90% goal by June 30th 2023, Schaaf & Wheeler will create a Strategic Plan to meet the 90% trash capture reduction goal for submission to the Water Board. This will be a memorandum taken from data provided within the Feasibility Report which provides specific actions and a schedule for completion.

Task 5: Coordination and Project Management

Schaaf & Wheeler will be made available to the city throughout this project via email and telephone. Face-to-face meetings will not be necessary.

Schedule and Fee

After notice to proceed and receipt of GIS data, this study is estimated to take 4 weeks to complete following notice to proceed.

Table 1 – Project Fee

Union City Trash Feasibility Schaaf & Wheeler (3/17/23)		Schedule of Hours and Rates by Task			
		Schaaf & Wheeler			Schaaf & Wheeler Total
Task	Hourly Rate	Principal Project Manager	Assistant Engineer	GIS Analyst	
TASK 1	DATA COLLECTION/REVIEW	2	8	8	\$ 3,670
TASK 2	IDENTIFY TRASH DEVICE OPPORTUNITIES	4	60	8	\$ 14,360
TASK 3	FEASIBILITY STUDY REPORT	4	24	8	\$ 7,340
TASK 4	STRATEGIC PLAN	2	12		\$ 2,890
TASK 5	COORDINATION AND PROJECT MANAGEMENT	6			\$ 1,650
	TOTAL	18	104	24	\$ 29,910

Schaaf & Wheeler proposes to complete this work on a time and materials basis for a fee not to exceed \$29,910. Work will be billed in accordance with our 2023 charge rate (attached). Standard provisions dated April, 2017 (attached) apply. If you have any questions regarding this scope and budget, do not hesitate to contact me at (415) 823-4964 or ctharp@swsv.com.

Best regards,

SCHAAF & WHEELER



\Caitlin Tharp, PE
CPSWQ, LEED AP, QSD/QSP
Vice President
RCE 76810

I DO HEREBY AUTHORIZE SCHAAF & WHEELER TO PROCEED FORWARD WITH THE EXECUTION OF THIS SCOPE OF WORK AS DESCRIBED HEREIN.

Name, Title

Date

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

4699 Old Ironsides Dr., Suite 350
Santa Clara, CA 95054-1860
408-246-4848

Hourly Charge Rate Schedule

Personnel Charges

Charges for personnel engaged in professional and/or technical work are based on the actual hours directly chargeable to the project.

Current rates by classification are listed below:

<u>Classification</u>	<u>Rate/Hr</u>	<u>Classification</u>	<u>Rate/Hr</u>
Principal Project Manager	\$275	Construction Manager	\$250
Senior Project Manager	\$250	Senior Resident Engineer	\$235
Senior Engineer	\$235	Resident Engineer	\$210
Associate Engineer	\$210	Assistant Resident Engineer	\$190
Assistant Engineer	\$195		
Junior Engineer	\$185		
Designer	\$175		
GIS Analyst	\$175		
Technician	\$160		
Engineering Trainee	\$135		

Litigation Charges

Work done in preparation for litigation and other very high level-of-expertise assignments is charged at \$400 per hour. Court or deposition time as an expert witness is charged at \$500 per hour.

Materials and Services

Subcontractors, special equipment, outside reproduction, data processing, computer services, etc., will be charged at 1.10 times cost.

Effective 1/1/23

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

4699 Old Ironsides Dr., Suite 350
Santa Clara, CA 95054-1860
408-246-4848
Fax 408-246-5624

Standard Provisions

April 2017

Conditions set forth below are incorporated as part of this Agreement. These Standard Provisions and the accompanying proposal constitute the full and complete Agreement between the parties and may be changed, amended, added to, superseded, or waived only if both parties specifically agree in writing to such amendment of the Agreement. In the event of any inconsistency between these Standard Provisions and any proposal, contract, purchase order, requisition, notice to proceed, or like document, these Standard Provisions shall govern.

1. PROFESSIONAL STANDARDS OF CARE - Schaaf & Wheeler, its employees, subconsultants, and subcontractors (hereinafter referred to as "CONSULTANT") shall perform its services under this Agreement in accordance with the degree of care and skill ordinarily practiced at the same point in time and under similar circumstances by professionals providing similar services. No other warranty, express or implied, shall apply to the services performed by CONSULTANT.
2. INDEMNITY – CONSULTANT shall indemnify and hold harmless CLIENT (including its officers and employees) against claims, losses, damages, liabilities (including the reimbursement of reasonable attorney's fees), and liability for injury or harm to persons or property to the extent caused by the negligence, recklessness, or willful misconduct of CONSULTANT for professional services performed under this Agreement. The duty to defend obligation of the CONSULTANT shall be limited to the proportionate percentage of any claim arising directly from the services performed by the CONSULTANT under this Agreement.
3. FORCE MAJEURE – Neither party shall be deemed in default of this Agreement to the extent that any delay or failure in the performance of its obligations results from any cause beyond its reasonable control and without its negligence.
4. DISPUTE RESOLUTION – CLIENT and CONSULTANT agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement to non-binding mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association, effective as of the date of this agreement. This provision shall survive completion or termination of this Agreement; however, neither party shall seek mediation of any claim or dispute arising out of this Agreement beyond the period of time that would bar the initiation of legal proceedings to litigate such claim or dispute under the applicable law.
5. APPLICABLE LAWS – CONSULTANT shall perform its services in accordance with the laws, rules, regulations, and codes that are applicable to the project and in force at the time of the completion of the documents.
6. HAZARDOUS MATERIALS - The scope of CONSULTANT's services for this Agreement does not include any responsibility for detection, remediation, accidental release, or services relating to waste, oil, asbestos, lead, or other hazardous materials, as defined by Federal, State, and local laws or regulations.

7. RIGHT OF ENTRY - When entry to property is required for the CONSULTANT to perform its services, the CLIENT agrees to obtain legal right-of-entry on the property.
8. RELIANCE ON INFORMATION PROVIDED BY OTHERS – CONSULTANT shall be entitled to rely, without liability, on the accuracy and completeness of any and all information provided by CLIENT, CLIENT’s consultants and contractors, and information from public records, without the need for independent verification.
9. THIRD PARTIES - Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, a third party against either the CLIENT or CONSULTANT. CONSULTANT’s services hereunder are being performed solely for the benefit of the CLIENT, and no other entity shall have any claim against CONSULTANT because of this Agreement or CONSULTANT’s performance of services hereunder.
10. OWNERSHIP OF DOCUMENTS - The CLIENT agrees not to use CONSULTANT-generated documents for marketing purposes, for projects other than the project for which the documents were prepared by CONSULTANT, or for future modifications to this project, without CONSULTANT’s express written permission. Any reuse or distribution to third parties without such express written permission or project-specific adaptation by CONSULTANT will be at the CLIENT’s sole risk and without liability to CONSULTANT or its employees, independent professional associates, subconsultants, and subcontractors. CLIENT shall, to the fullest extent permitted by law, defend, indemnify, and hold harmless CONSULTANT from and against any and all costs, expenses, fees, losses, claims, demands, liabilities, suits, actions, and damages whatsoever arising out of or resulting from such unauthorized reuse or distribution.
11. SUSPENSION OR TERMINATION OF CONTRACT – CLIENT may suspend or terminate this Agreement with seven days prior written notice to CONSULTANT for convenience or cause. CONSULTANT may terminate this Agreement for cause with seven days prior written notice to CLIENT. Failure of CLIENT to make payments when due shall be cause for suspension of services, or, ultimately, termination, unless and until CONSULTANT has been paid in full all amounts due for services, expenses, and other related charges.
12. SITE VISITS - In the event that CONSULTANT’s scope of services shall include site visits during the construction phase, CONSULTANT shall be serving only in the capacity as a consultant to advise CLIENT on issues involving progress and general design compliance. CONSULTANT does not assume any responsibility for the quality, sequences, techniques, or timeliness of any contractor’s work, job site safety, continuous onsite inspections, or any issues that fall outside of the CONSULTANT’s scope of services as defined herein.
13. GOVERNING LAWS - The laws of the state of California shall govern the validity and interpretation of the Agreement.
14. INSURANCE - During the performance of work covered by this Agreement, CONSULTANT shall maintain the following insurance coverage:

a) Workers' Compensation	Statutory
b) Commercial General Liability (includes Products & Completed Operations)	\$2,000,000 each occurrence; \$4,000,000 aggregate
c) Automobile Liability	\$1,000,000 combined single limit each accident
d) Professional Liability	\$5,000,000 each claim; \$5,000,000 aggregate

15. PREVAILING WAGE OBLIGATIONS - The Client shall notify Schaaf & Wheeler in writing if the Work contemplated by this Agreement constitutes a "public work" under any and all federal, state and/or local prevailing wage laws, and/or living wage laws, including but not limited to the Davis-Bacon Act and the provisions of California Labor Code §§ 1720 et seq. In the event that Schaaf & Wheeler must adhere to federal, state and/or local prevailing wage obligations for the Work performed, the Client shall notify and provide Schaaf & Wheeler with any and all applicable prevailing wage determinations prior to the Work to being performed under this Agreement. Any prevailing wage obligations might affect the payment terms contemplated by this Agreement and thus constitute a changed condition mandating renegotiation and/or termination of this Agreement. The Client understands and agrees that Schaaf & Wheeler will rely on the representations made by the Client with regard to prevailing wage obligations and the Client agrees to indemnify Schaaf & Wheeler, its officers, directors, employees, agents and/or subcontractors against any and all claims, liabilities, suits, demands, losses, costs and expenses, including but not limited to reasonable attorney's fees and legal costs, arising from Schaaf & Wheeler's reliance upon the Client's representations regarding prevailing wage obligations.

EXHIBIT B

PROVISIONS REQUIRED FOR PUBLIC WORKS CONTRACTS PURSUANT TO CALIFORNIA LABOR CODE SECTION 1720 *ET SEQ.*

HOURS OF WORK:

- A. In accordance with California Labor Code Section 1810, 8 hours of labor in performance of the services described in Exhibit A shall constitute a legal day's work under this contract.
- B. In accordance with California Labor Code Section 1811, the time of service of any worker employed in performance of the services described in Exhibit A is limited to eight hours during any one calendar day, and forty hours during any one calendar week, except in accordance with California Labor Code Section 1815, which provides that work in excess of eight hours during any one calendar day and forty hours during any one calendar week is permitted upon compensation for all hours worked in excess of eight hours during any one calendar day and forty hours during any one calendar week at not less than one-and-one-half times the basic rate of pay.
- C. The Consultant and its subcontractors shall forfeit as a penalty to the City \$25 for each worker employed in the performance of the services described in Exhibit A for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day, or more than 40 hours in any one calendar week, in violation of the provisions of California Labor Code Section 1810 and following.

WAGES:

- A. In accordance with California Labor Code Section 1773.2, the City has determined the general prevailing wages in the locality in which the services described in Exhibit A are to be performed for each craft or type of work needed to be as published by the State of California Department of Industrial Relations, Division of Labor Statistics and Research, a copy of which is on file in the City Public Works Office and shall be made available on request. The Consultant and subcontractors engaged in the performance of the services described in Exhibit A shall pay no less than these rates to all persons engaged in performance of the services described in Exhibit A.
- B. In accordance with Labor Code Section 1775, the Consultant and any subcontractors engaged in performance of the services described in Exhibit A shall comply Labor Code Section 1775, which establishes a penalty of up to \$50 per day for each worker engaged in the performance of the services described in Exhibit A that the Consultant or any subcontractor pays less than the specified prevailing wage. The amount of such penalty shall be determined by the Labor Commissioner and shall be based on consideration of the mistake, inadvertence, or neglect of the Consultant or subcontractor in failing to pay the correct rate of prevailing wages, or the previous record of the Consultant or subcontractor in meeting applicable prevailing wage obligations, or the willful failure by the Consultant or subcontractor to pay the correct rates of prevailing wages. A mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages is not excusable if the Consultant or subcontractor had knowledge of their obligations under the California Labor Code. The Consultant or subcontractor shall pay the

difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate. If a subcontractor worker engaged in performance of the services described in Exhibit A is not paid the general prevailing per diem wages by the subcontractor, the Consultant is not liable for any penalties therefore unless the Consultant had knowledge of that failure or unless the Consultant fails to comply with all of the following requirements:

1. The contract executed between the Consultant and the subcontractor for the performance of part of the services described in Exhibit A shall include a copy of the provisions of California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.
 2. The Consultant shall monitor payment of the specified general prevailing rate of per diem wages by the subcontractor by periodic review of the subcontractor's certified payroll records.
 3. Upon becoming aware of a subcontractor's failure to pay the specified prevailing rate of wages, the Consultant shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for performance of the services described in Exhibit A.
 4. Prior to making final payment to the subcontractor, the Consultant shall obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages for employees engaged in the performance of the services described in Exhibit A and any amounts due pursuant to California Labor Code Section 1813.
- C. In accordance with California Labor Code Section 1776, the Consultant and each subcontractor engaged in performance of the services described in Exhibit A shall keep accurate payroll records showing the name, address, social security number, work, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in performance of the services described in Exhibit A. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:
1. The information contained in the payroll record is true and correct.
 2. The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by the employer's employees on the public works project.

The payroll records required pursuant to California Labor Code Section 1776 shall be certified and shall be available for inspection by the Owner and its authorized representatives, the Division of Labor Standards Enforcement, the Division of Apprenticeship Standards of the Department of Industrial Relations and shall otherwise be available for inspection in accordance with California Labor Code Section 1776.

- D. In accordance with California Labor Code Section 1777.5, the Consultant, on behalf of the Consultant and any subcontractors engaged in performance of the services described in Exhibit A, shall be responsible for ensuring compliance with California Labor Code Section 1777.5 governing employment and payment of apprentices on public works contracts.

- E. In case it becomes necessary for the Consultant or any subcontractor engaged in performance of the services described in Exhibit A to employ for the services described in Exhibit A any person in a trade or occupation (except executive, supervisory, administrative, clerical, or other non manual workers as such) for which no minimum wage rate has been determined by the Director of the Department of Industrial Relations, the Contractor shall pay the minimum rate of wages specified therein for the classification which most nearly corresponds to services described in Exhibit A to be performed by that person. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

DIR REGISTRATION

Consultant shall be currently registered with the Department of Industrial Relations and qualified to perform public work consistent with Labor Code section 1725.5, except in limited circumstances as set forth in Labor Code section 1771.1. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to California Labor Code Section 1725.5. Consultant agrees, in accordance with Section 1771.4 of the California Labor Code, that if the work under this Agreement qualifies as public work, it is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Schaaf & Wheeler

CONSULTING CIVIL ENGINEERS

4699 Old Ironsides Drive, Suite 350
Santa Clara, CA 95054
Tel: 408-246-4848

Offices
Santa Clara
San Francisco
Salinas
Santa Rosa
Truckee

Invoice

City of Union City Attn:
Finance Department
34009 Alvarado - Nilas Road
Union City, CA 94587

Invoice Date: Apr 30, 2023
Invoice Num: 37464
Billing Through: Apr 30, 2023

Trash Capture Feasibility Study-City Project No. 23-22 (CUCX.01.23:001) - **PO#:** 1050375 - Managed by (CJT)

Contract Amount: \$29,910.00	Amount Billed: \$13,457.50	Amount Remaining: \$16,452.50
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Professional Services:

<u>Classification</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR Project MANAGER	16.00	\$250.00	\$4,000.00
ASSISTANT ENGINEER	48.50	\$195.00	\$9,457.50

Total Services: \$13,457.50

Project (CUCX.01.23:001) Total Amount Due: \$13,457.50

Amount Due This Invoice: \$13,457.50

This invoice is due upon receipt

PO 1050375
Approved to pay:

DocuSigned by:
Eddie Yu 5/31/2023
B7690B069591409...

Approved by:

DocuSigned by:
Farooq Azim 5/31/2023
F3B858078E234AF...
Farooq Azim, City Engineer



Union City Trash Feasibility April 2023 Invoice		Contract Total	Current Invoice	Previously Invoiced	Remaining in Contract
	Task				
TASK 1	DATA COLLECTION/REVIEW	\$ 3,670	\$ 3,670.00		\$ -
TASK 2	IDENTIFY TRASH DEVICE OPPORTUNITIES	\$ 14,360	\$ 9,137.50		\$ 5,222.50
TASK 3	FEASIBILITY STUDY REPORT	\$ 7,340			\$ 7,340.00
TASK 4	STRATEGIC PLAN	\$ 2,890			\$ 2,890.00
TASK 5	COORDINATION AND PROJECT MANAGEMENT	\$ 1,650	\$ 650.00		\$ 1,000.00
	TOTAL	\$ 29,910	\$13,457.50	\$ -	\$16,452.50

Cost Data Summary - RD

Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Item	Range	Life
Miles Run	5,454.0	38,997.0
Fuel Used	2,699.9	18,886.6
Fuel Cons MPG	2.02	2.06
Oil Used	0	0
Oil Cons MPQ	0	0

Acquired	3/2017
Book Value	29882.23
Condition	New
Fuel Type	Diesel
License	1495633
Year	2016

Unit Number	472
Category	STREETS
Start Miles	80
Current Miles	39077
Serial Number	516M1DB22GH221707
Vehicle Make	AUTOCAR
Vehicle Model	XPERT
Vehicle Type	Elgin Crosswind "J"
Body Type	Street Sweeper
Location Garaged	Corp Yard
Engine Make	Cummins
Engine Model	ISB 6.7
Engine Oil	15W40
Transmission Make	Allison

Operating Cost Analysis

Accident Damage	0%	6%
Breakdown	2%	1%
Campaign	0%	0%
Fuel Cost	17%	14%
Meeting	0%	0%
New Vehicle Prep	0%	0%
PM Services	0%	1%
Service Call	1%	1%
Verbal Report	34%	25%
Warranty	0%	0%
Other	47%	53%

Maintenance	Range				Life Cost			
	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
VMRS System								
001 - Air Conditioning, Heating & Ventilating	0	0	0	0.00	0	1,260	1,260	0.03
002 - Cab & Sheet Metal	0	0	0	0.00	0	0	0	0.00
003 - Instruments, Gauges, Warning &	0	0	0	0.00	0	0	0	0.00
013 - Brakes	0	0	0	0.00	0	1,050	1,050	0.03
015 - Steering	0	0	0	0.00	46	210	256	0.01
016 - Suspension	0	0	0	0.00	0	0	0	0.00
017 - Tires, Tubes, Liners & Valves	1,007	105	1,112	0.20	8,278	945	9,223	0.24
019 - Automatic/Manual Chassis Lubricator	0	0	0	0.00	0	0	0	0.00
022 - Axles - Driven, Rear	0	0	0	0.00	0	0	0	0.00
025 - Transfer Case	0	0	0	0.00	0	0	0	0.00
038 - Electric Power Management - Electric	0	0	0	0.00	0	0	0	0.00
039 - Electric Drive Components - Electric	0	0	0	0.00	0	0	0	0.00
042 - Cooling System	0	0	0	0.00	3	105	108	0.00
043 - Exhaust System	0	0	0	0.00	0	0	0	0.00
049 - Power Train - Hydraulic, Hybrid	0	0	0	0.00	0	0	0	0.00
053 - Expendable Items	0	0	0	0.00	0	0	0	0.00
055 - Cargo Handling, Restraints, & Lift	0	0	0	0.00	0	0	0	0.00
065 - Hydraulic Systems - Multi-Function	0	0	0	0.00	0	0	0	0.00
121 - Final Drive	0	0	0	0.00	0	0	0	0.00
142 - LNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00
143 - CNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00
154 - Medical Devices	0	0	0	0.00	0	0	0	0.00
176 - Chassis Shipping Unit	0	0	0	0.00	0	0	0	0.00
178 - Roll-Off & Lugger Bodies	0	0	0	0.00	0	0	0	0.00
199 - Processing Screens	0	0	0	0.00	0	0	0	0.00
292 - Concrete Pumping Equipment	0	0	0	0.00	0	0	0	0.00
293 - Oil Shaker Box	0	0	0	0.00	0	0	0	0.00
294 - Fuel Metering	0	0	0	0.00	0	0	0	0.00
368 - Milling	0	0	0	0.00	0	0	0	0.00
369 - Crushing	0	0	0	0.00	0	0	0	0.00
462 - Insulating Lift Equipment	0	0	0	0.00	0	0	0	0.00
463 - Insulating Drilling and Boring Equipment	0	0	0	0.00	0	0	0	0.00
464 - Digging	0	0	0	0.00	0	0	0	0.00
465 - Compacting	0	0	0	0.00	0	0	0	0.00
90A - Sublet	0	15,683	15,683	2.88	0	110,614	110,614	2.84
INV - INVOICING	0	0	0	0.00	0	210	210	0.01

Cost Data Summary - RD

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Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Maintenance	Range				Life Cost			
	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
VMRS System								
MTR - Meeting & Training	0	0	0	0.00	0	315	315	0.01
OFC - Other Fixed Cost	0	0	0	0.00	0	0	0	0.00
PMS - Preventative Maintenance	0	0	0	0.00	439	1,680	2,119	0.05
TOW - TOWING	0	0	0	0.00	0	0	0	0.00
WAS - Wash & Appearance	0	0	0	0.00	0	0	0	0.00
Other Operational	9,177	5,198	14,375	2.64	38,230	26,685	64,915	1.66
Sub-Total	10,184	20,986	31,170	5.72	46,995	143,074	190,069	4.87
DE0 - Depreciation	34,213	0	34,213	6.27	236,381	0	236,381	6.06
INS - Insurance	0	0	0	0.00	0	0	0	0.00
LIC - Licenses	0	0	0	0.00	941	105	1,046	0.03
Other Fixed	0	0	0	0.00	0	0	0	0.00
Sub-Total	34,213	0	34,213	6.27	237,322	105	237,427	6.09
FL0 - Fuel	13,468	0	13,468	2.47	66,937	0	66,937	1.72
Sub-Total	13,468	0	13,468	2.47	66,937	0	66,937	1.72
Total	57,866	20,986	78,851	14.46	351,254	143,179	494,433	12.68

Cost Data Summary - RD

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Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Item	Range	Life
Miles Run	6,430.0	77,993.0
Fuel Used	3,726.6	39,802.8
Fuel Cons MPG	1.73	1.96
Oil Used	0	0
Oil Cons MPQ	0	0

Acquired	1/2013
Book Value	5000.00
Condition	New
Fuel Type	Diesel
License	1409701
Year	2012

Unit Number	475
Category	STREETS
Start Miles	185
Current Miles	78178
Serial Number	1FVACXDT4CHBP0741
Vehicle Make	Freightliner
Vehicle Model	Business Class M2
Vehicle Type	Elgin Crosswind
Body Type	Street Sweeper
Location Garaged	Corp Yard
Engine Make	Cummins
Engine Model	ISB 6.7
Engine Oil	15W40
Transmission Make	Allison

Operating Cost Analysis

Breakdown	0%	4%
Campaign	0%	0%
Fuel Cost	34%	18%
Meeting	0%	0%
New Vehicle Prep	0%	0%
PM Follow-up	0%	1%
PM Services	0%	1%
Service Call	0%	0%
Verbal Report	62%	38%
Warranty	0%	0%
Other	5%	38%

Maintenance	Range				Life Cost			
	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
VMRS System								
001 - Air Conditioning, Heating & Ventilating	0	0	0	0.00	37	1,628	1,665	0.02
002 - Cab & Sheet Metal	0	0	0	0.00	0	0	0	0.00
003 - Instruments, Gauges, Warning &	0	0	0	0.00	0	525	525	0.01
013 - Brakes	0	0	0	0.00	1,302	3,675	4,977	0.06
015 - Steering	0	0	0	0.00	32	210	242	0.00
016 - Suspension	0	0	0	0.00	0	420	420	0.01
017 - Tires, Tubes, Liners & Valves	0	0	0	0.00	6,151	1,313	7,463	0.10
019 - Automatic/Manual Chassis Lubricator	0	0	0	0.00	0	0	0	0.00
022 - Axles - Driven, Rear	0	0	0	0.00	0	0	0	0.00
025 - Transfer Case	0	0	0	0.00	0	0	0	0.00
038 - Electric Power Management - Electric	0	0	0	0.00	0	0	0	0.00
039 - Electric Drive Components - Electric	0	0	0	0.00	0	0	0	0.00
042 - Cooling System	0	0	0	0.00	147	1,155	1,302	0.02
043 - Exhaust System	0	0	0	0.00	207	735	942	0.01
049 - Power Train - Hydraulic, Hybrid	0	0	0	0.00	0	0	0	0.00
053 - Expendable Items	0	0	0	0.00	0	0	0	0.00
055 - Cargo Handling, Restraints, & Lift	0	0	0	0.00	0	0	0	0.00
065 - Hydraulic Systems - Multi-Function	0	0	0	0.00	50	105	155	0.00
121 - Final Drive	0	0	0	0.00	0	0	0	0.00
142 - LNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00
143 - CNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00
154 - Medical Devices	0	0	0	0.00	0	0	0	0.00
176 - Chassis Shipping Unit	0	0	0	0.00	0	0	0	0.00
178 - Roll-Off & Lugger Bodies	0	0	0	0.00	0	0	0	0.00
199 - Processing Screens	0	0	0	0.00	0	0	0	0.00
292 - Concrete Pumping Equipment	0	0	0	0.00	0	0	0	0.00
293 - Oil Shaker Box	0	0	0	0.00	0	0	0	0.00
294 - Fuel Metering	0	0	0	0.00	0	0	0	0.00
368 - Milling	0	0	0	0.00	0	0	0	0.00
369 - Crushing	0	0	0	0.00	0	0	0	0.00
462 - Insulating Lift Equipment	0	0	0	0.00	0	0	0	0.00
463 - Insulating Drilling and Boring Equipment	0	0	0	0.00	0	0	0	0.00
464 - Digging	0	0	0	0.00	0	0	0	0.00
465 - Compacting	0	0	0	0.00	0	0	0	0.00
90A - Sublet	0	22,125	22,125	3.44	717	154,493	155,210	1.99
INV - INVOICING	0	0	0	0.00	0	0	0	0.00

Cost Data Summary - RD

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Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Maintenance	Range				Life Cost			
	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
VMRS System								
MTR - Meeting & Training	0	0	0	0.00	0	735	735	0.01
OFC - Other Fixed Cost	0	0	0	0.00	0	0	0	0.00
PMS - Preventative Maintenance	0	0	0	0.00	3,472	7,035	10,507	0.13
TOW - TOWING	0	0	0	0.00	0	0	0	0.00
WAS - Wash & Appearance	0	0	0	0.00	0	0	0	0.00
Other Operational	10,908	4,725	15,633	2.43	102,981	80,865	183,846	2.36
Sub-Total	10,908	26,850	37,757	5.87	115,095	252,893	367,988	4.72
DE0 - Depreciation	0	0	0	0.00	231,563	0	231,563	2.97
INS - Insurance	0	0	0	0.00	0	0	0	0.00
LIC - Licenses	0	0	0	0.00	0	0	0	0.00
Other Fixed	0	0	0	0.00	0	0	0	0.00
Sub-Total	0	0	0	0.00	231,563	0	231,563	2.97
FL0 - Fuel	18,887	0	18,887	2.94	128,557	105	128,662	1.65
Sub-Total	18,887	0	18,887	2.94	128,556	105	128,661	1.65
Total	29,794	26,850	56,644	8.81	475,214	252,998	728,212	9.34

Cost Data Summary - RD

6/13/2023 9:11:58 PM

Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Item	Range	Life
Miles Run	5,137.0	86,250.0
Fuel Used	2,150.1	38,163.8
Fuel Cons MPG	2.39	2.26
Oil Used	0	0
Oil Cons MPQ	0	0

Acquired	4/2011
Book Value	5000.00
Condition	Used
Fuel Type	Diesel
License	1309043
Year	2010

Unit Number	476
Category	STREETS
Start Miles	2826
Current Miles	89076
Serial Number	JNAPC81L1AAF80048
Vehicle Make	NISSAN UD
Vehicle Model	3300
Vehicle Type	Elgin Crosswind "J"
Body Type	Street Sweeper
Location Garaged	Corp Yard
Engine Make	NISSAN
Engine Model	J08E-UJ
Engine HP	230
Engine Oil	15W40

Operating Cost Analysis

Accident Damage	0%	0%
Breakdown	0%	2%
Campaign	0%	0%
Fuel Cost	41%	18%
New Vehicle Prep	0%	0%
PM Follow-up	0%	2%
PM Services	0%	2%
Service Call	0%	1%
Verbal Report	48%	34%
Other	11%	42%

Maintenance	Range				Life Cost				
	VMRS System	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
001 - Air Conditioning, Heating & Ventilating	536	105	641	0.12	544	315	859	0.01	
002 - Cab & Sheet Metal	0	0	0	0.00	0	0	0	0.00	
003 - Instruments, Gauges, Warning &	0	0	0	0.00	2	525	527	0.01	
013 - Brakes	0	0	0	0.00	1,273	2,678	3,950	0.05	
015 - Steering	0	0	0	0.00	0	210	210	0.00	
016 - Suspension	0	0	0	0.00	0	0	0	0.00	
017 - Tires, Tubes, Liners & Valves	0	0	0	0.00	11,165	1,711	12,876	0.15	
019 - Automatic/Manual Chassis Lubricator	0	0	0	0.00	0	0	0	0.00	
022 - Axles - Driven, Rear	0	0	0	0.00	0	0	0	0.00	
025 - Transfer Case	0	0	0	0.00	0	0	0	0.00	
038 - Electric Power Management - Electric	0	0	0	0.00	0	0	0	0.00	
039 - Electric Drive Components - Electric	0	0	0	0.00	0	0	0	0.00	
042 - Cooling System	0	0	0	0.00	35	1,155	1,190	0.01	
043 - Exhaust System	0	0	0	0.00	0	0	0	0.00	
049 - Power Train - Hydraulic, Hybrid	0	0	0	0.00	0	0	0	0.00	
053 - Expendable Items	0	0	0	0.00	0	0	0	0.00	
055 - Cargo Handling, Restraints, & Lift	0	0	0	0.00	0	0	0	0.00	
065 - Hydraulic Systems - Multi-Function	0	0	0	0.00	311	2,468	2,778	0.03	
121 - Final Drive	0	0	0	0.00	0	0	0	0.00	
142 - LNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00	
143 - CNG Engine Fuel System	0	0	0	0.00	0	0	0	0.00	
154 - Medical Devices	0	0	0	0.00	0	0	0	0.00	
176 - Chassis Shipping Unit	0	0	0	0.00	0	0	0	0.00	
178 - Roll-Off & Lugger Bodies	0	0	0	0.00	0	0	0	0.00	
199 - Processing Screens	0	0	0	0.00	0	0	0	0.00	
292 - Concrete Pumping Equipment	0	0	0	0.00	0	0	0	0.00	
293 - Oil Shaker Box	0	0	0	0.00	0	0	0	0.00	
294 - Fuel Metering	0	0	0	0.00	0	0	0	0.00	
368 - Milling	0	0	0	0.00	0	0	0	0.00	
369 - Crushing	0	0	0	0.00	0	0	0	0.00	
462 - Insulating Lift Equipment	0	0	0	0.00	0	0	0	0.00	
463 - Insulating Drilling and Boring Equipment	0	0	0	0.00	0	0	0	0.00	
464 - Digging	0	0	0	0.00	0	0	0	0.00	
465 - Compacting	0	0	0	0.00	0	0	0	0.00	
90A - Sublet	0	7,787	7,787	1.52	0	129,753	129,753	1.50	
INV - INVOICING	0	0	0	0.00	0	0	0	0.00	
MTR - Meeting & Training	0	0	0	0.00	0	0	0	0.00	

Cost Data Summary - RD

6/13/2023 9:11:58 PM

Unit Cost Summary as of 6/13/2023

Coordinated Universal Time

Maintenance	Range				Life Cost			
	Parts	Labor	Total	CPM	Parts	Labor	Total	CPM
VMRS System								
OFC - Other Fixed Cost	0	0	0	0.00	0	0	0	0.00
PMS - Preventative Maintenance	0	0	0	0.00	3,719	9,574	13,293	0.15
TOW - TOWING	0	0	0	0.00	0	0	0	0.00
WAS - Wash & Appearance	0	0	0	0.00	68	210	278	0.00
Other Operational	4,417	3,360	7,777	1.51	107,397	82,602	189,998	2.20
Sub-Total	4,953	11,252	16,206	3.15	124,513	231,199	355,711	4.12
DE0 - Depreciation	0	0	0	0.00	212,435	0	212,435	2.46
INS - Insurance	0	0	0	0.00	0	0	0	0.00
LIC - Licenses	0	0	0	0.00	0	0	0	0.00
Other Fixed	0	0	0	0.00	0	0	0	0.00
Sub-Total	0	0	0	0.00	212,435	0	212,435	2.46
FL0 - Fuel	11,132	0	11,132	2.17	124,229	0	124,229	1.44
Sub-Total	11,132	0	11,132	2.17	124,229	0	124,229	1.44
Total	16,086	11,252	27,338	5.32	461,176	231,199	692,375	8.03



ENVIRONMENTAL SALES • SERVICE • PARTS • RENTALS

Please Remit Payment to:
Owen Equipment Sales
PO Box 515458
Los Angeles, CA 90051 - 6758
Federal ID No: 27-0306529
(800) 992-3656

Account#	Order #	Brc	Sls
C10132	56705	12	370

I N V O I C E

Date	Invoice #	Page
10-24-22	00058045	1

Sold To: 001
CITY OF UNION CITY
34009 ALVARADO NILES ROAD
ATTN: AP - 510.487.9361
UNION CITY CA 94587

Ship To:
CITY OF UNION CITY
34650 SEVENTH ST
ATTN: AP - 510.487.9361

UNION CITY CA 94587
Ship Via GROUND FREIGHT

Entered By Miller	Customer Purchase Order 350	Customer Contact PAUL ROMAN	Ord Date 10-21-22
	Equip ID	Customer Job #	Customer Phone # 510.675.5444

Ord	Ship	B/O Part Number	Description	Unit Price	UM	Extended
20	20	7873222	SB SEGMENT SET	150.00Ea		3,000.00
	1		CALIFORNIA FREIGHT (NON-TAXABLE)	222.87		222.87
			GLS FREIGHT TRACKING# 308476170			
Sub Total						3,222.87
CA California Sales Tax						322.50

ENTERED
NOV 08 2022
BY: 1048334

PLEASE NOTE OUR NEW REMITTANCE ADDRESS
PO BOX 515458
LOS ANGELES, CA 90051-6758

Total Invoice
Due By: 11/23/22
3,545.37

SELLER EXPRESSLY DISCLAIMS ALL EXPRESS WARRANTIES ON PRODUCTS IT SELLS. ANY WARRANTY IS THAT OF THE MANUFACTURER ONLY AND NOT OF OWEN EQUIPMENT.

NO GOODS RETURNED WITHOUT RETURNED GOODS AUTHORIZATION. A RESTOCKING CHARGE OF 15% (20% FOR SPECIAL ORDERS) WILL BE APPLIED ON ITEMS ORDERED IN ERROR AND RETURNED WITHIN 30 DAYS.

PAYMENT TERMS:
PARTS INVOICES - NET 30 DAYS FROM DATE OF INVOICE
EQUIPMENT SALES & RENTAL INVOICES - NET 10 DAYS FROM DATE OF INVOICE. 1.5% FINANCE CHARGE PER MONTH (18% ANNUAL RATE).



ENVIRONMENTAL SALES • SERVICE • PARTS • RENTALS

Please Remit Payment to:
Owen Equipment Sales
PO Box 515458
Los Angeles, CA 90051 - 6758
Federal ID No: 27-0306529
(800) 992-3656

Table with 4 columns: Account#, Order #, Brc, Sls. Values: C10132, 58669, 12, 370

INVOICE

Table with 3 columns: Date, Invoice #, Page. Values: 04-06-23, 00059609, 1

Sold To: 001
CITY OF UNION CITY
34009 ALVARADO NILES ROAD
ATTN: AP - 510.487.9361
UNION CITY CA 94587

Ship To:
CITY OF UNION CITY
34650 SEVENTH ST
ATTN: AP - 510.487.9361

UNION CITY CA 94587
Ship Via GROUND FREIGHT

Table with 4 columns: Entered By, Customer Purchase Order, Customer Contact, Ord Date. Values: Miller, VERBAL, PAUL ROMAN, 04-06-23

Table with 7 columns: Ord, Ship, B/O, Part Number, Description, Unit Price, UM, Extended

20 20 7873222 SB SEGMENT SET 150.00EA 3,000.00
1 SHIPPING 208.11 208.11
CLS TRACKING
303040390

Sub Total 3,208.11

CA California Sales Tax 322.50



NEW REMITTANCE ADDRESS EFFECTIVE IMMEDIATELY!

PO BOX 30640
LOS ANGELES, CA 90030-0640

Total Invoice
Due By: 05/06/23

3,530.61

SELLER EXPRESSLY DISCLAIMS ALL EXPRESS WARRANTIES ON PRODUCTS IT SELLS. ANY WARRANTY IS THAT OF THE MANUFACTURER ONLY AND NOT OF OWEN EQUIPMENT.

NO GOODS RETURNED WITHOUT RETURNED GOODS AUTHORIZATION. A RESTOCKING CHARGE OF 15% (20% FOR SPECIAL ORDERS) WILL BE APPLIED ON ITEMS ORDERED IN ERROR AND RETURNED WITHIN 30 DAYS.

PAYMENT TERMS:
PARTS INVOICES - NET 30 DAYS FROM DATE OF INVOICE
EQUIPMENT SALES & RENTAL INVOICES - NET 10 DAYS FROM DATE OF INVOICE. 1.5% FINANCE CHARGE PER MONTH (18% ANNUAL RATE)

Parts Receipt History

6/13/2023 9:02:03 PM

By Part - 6/21/2022 to 6/13/2023

Coordinated Universal Time

Part Number: 7873222 (Main Shop)

Description: SEGMENT SET

Date Received	PO Number	Invoice Number	Notes	Quantity	Per Unit Cost	Total Cost	Vendor Name	Receipt Notes
4/6/2023		00059609		20	\$150.0000	\$3000.00	Owen Equipment Company	
10/24/2022		00058045		20	\$150.0000	\$3000.00	Owen Equipment Company	
6/30/2022		00056859		20	\$145.0000	\$2900.00	Owen Equipment Company	

Total Quantity/Cost 60 \$8,900.00

Total Extended Cost For All Parts \$8,900.00

2022 & 2023 Vac Truck Operations for Catch Basins

DATE	MAINT 2	MAINT 1	VAC TRUCK HRS	CLEAN OUT C.B.	LOADS	H2O FILLS
1/31/22	1	2	8	9	1	1
2/1/22	1	2	8	8	1	1
2/11/22	1	1	8	9	1	1
2/14/22	1	2	4	2	1	3
3/25/22	1	2	8	8	1	1
3/30/22	1	2	6	5	1	1
4/5/22	1	2	8	13	1	1
4/11/22		2	8	7	4	1
4/17/22	1	1	8	5	1	1
6/27/22	1	3	8	6	2	2
7/25/22		2	8	6	1	1
7/29/22	1	1	8	7	1	1
8/11/22		2	8	9	2	2
8/25/22	1	2	8	5	1	1
10/24/22		3	8	6	1	1
10/31/22	1	2	8	3	1	1
11/1/22	1	1	8	7	1	1
11/2/22	1	1	8	10	2	2
12/12/22	1	1	8	15	2	2
12/13/22	1	1	8	15	2	2

2022 & 2023 Vac Truck Operations for Catch Basins

DATE	MAINT 2	MAINT 1	VAC TRUCK HRS	CLEAN OUT C.B.	LOADS	H2O FILLS
1/4/23	1		4	3	1/2	1
1/5/23	1	1	8	15	4	1
1/13/23	1	1	8	15	1	1
1/18/23		2	8	12	1	1
1/19/23		2	8	10	1	1
2/14/23	1	2	8	10	1	1
2/15/23		2	8	10	1	1
3/8/23	1	1	6	4	1	1
3/10/23	1	2	8	8	1	1
3/13/23		2	4	2	1	1
3/20/23	1	1	8	9	1	1
3/28/23	1	1	8	6	1	1
4/6/23	1	2	8	20	1	2
4/7/23	1	2	8	5	1	1
DAY TOTALS	MAINT #2	MAINT #1	VAC TRUCK HRS	CLEAN OUT C.B.	LOADS	H2O FILLS
34	25	56	256 hrs	284	44 1/2	42

2022 & 2023 Vac Truck Operations for Catch Basins

DATE	MAINT 2	MAINT 1	VAC TRUCK HRS	CLEAN OUT C.B.	LOADS	H2O FILLS
DAY TOTALS	MAINT #2	MAINT #1	VAC TRUCK HRS	CLEAN OUT C.B.	LOADS	H2O FILLS
34	25	56	256 hrs	284	44 1/2	42
3	2	4	4hrs			
2	2	3	6hrs			
29	21	49	8hrs			
2022	15	35	154	155	28	27
2023	10	21	102	129	16 1/2	15
Street Maint. #2	\$ 46.40 Hr					
Street Maint. #1	\$ 41.92 Hr					
Vac Truck	\$ 1,900 Day					

1 DECLARATION OF SANDRA MATHEWS IN SUPPORT OF TEST CLAIM

2 I, SANDRA MATHEWS, declare as follows:

3 1. I make this declaration in support of the Test Claim submitted by
4 the City of Union City (“Union City” or “City”). Except where otherwise
5 indicated, the facts set forth below are of my own personal knowledge and, if
6 called upon to testify, I could and would competently testify to the matters set
7 forth herein.

8 2. I have received the following degrees and credentials: Bachelor of
9 Arts in Liberal Arts, History of Science, Technology and Society, and
10 Linguistics, State University of New York at Stony Brook; Master’s Program
11 in Environmental and Waste Management, State University of New York at
12 Stony Brook; Certified Professional in Erosion and Sediment Control,
13 EnviroCert International.

14 3. I am employed by Larry Walker Associates as Vice President. In
15 that position, I been the project manager for three consecutive five-year
16 contracts supporting the Alameda Countywide Clean Water Program
17 (“Alameda Countywide Program,” or “Program”). Since January 2022, I have
18 served as the Program’s Interim Program Manager.

19 4. The Alameda Countywide Program is a consortium made up of the
20 Cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward,
21 Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union
22 City; the County of Alameda; the District, and the Zone 7 Water Agency
23 (collectively, the “Consortium”). The Program was created in 1991 through a
24 Memorandum of Agreement (“MOA”). Among other things, the MOA
25 established a General Program, which carries out activities in common on
26 behalf of the Consortium. The MOA also established a management structure
27 and funding mechanism to carry out general Program activities. I am aware
28 of these facts in my role as Interim Program Manager.

1 5. I have served as the Program’s Interim Program Manager since
2 January 2022. In this role, I have primary responsibility on behalf of the
3 Program for coordination of Alameda Countywide Program activities and
4 support of its Management Committee leaders. My duties include preparing
5 and modifying annual budgets and coordinating and submitting required
6 program reports to the Regional Water Quality Control Board (San Francisco
7 Bay Region) (“Regional Water Board”), serving as liaison to region-wide
8 committees and workgroups, and advising the Consortium on compliance with
9 federal and state laws, regulations, and orders.

10 6. Union City is subject to the Municipal Regional Stormwater
11 NPDES Permit, Regional Water Board, San Francisco Bay Region, Order No.
12 R2-2022-0019 (NPDES Permit No. CAS612008), issued by the Regional Water
13 Board on May 11, 2022 (“MRP3”) and effective on July 1, 2022. The MRP3
14 was amended in October 2023 by Order No. R2-2023-0019. I have reviewed
15 the MRP3, as modified, and am familiar with its requirements.

16 7. I have also reviewed and am familiar with the requirements of
17 Order No. R2-2015-0049 (NPDES Permit No. CAS612008), issued by the
18 Regional Water Board on November 19, 2015 (“MRP2”), under which the City
19 was also a Permittee. I have also reviewed and am familiar with the
20 requirements of Order No. R2-2009-0074 (NPDES Permit No. CAS612008)
21 issued by the Regional Water Board on October 14, 2009, amended by Order
22 No. R2-2011-0083 on November 28, 2011 (“MRP1”)

23 8. In order to provide the information required under Government
24 Code section 17553, subdivision (b)(1)(E), I have been asked by the Program to
25 provide a statewide cost estimate of increased costs that all local agencies will
26 incur to implement the mandates of the MRP3 during the 23/24 fiscal year
27 (“fiscal year” or “FY”) – the fiscal year immediately following the fiscal year for
28 which the claim was filed as required by Government Code section

1 17553(b)(1)(E). . The statewide costs are extrapolated from the Union City
2 costs as set forth below. The Union City costs include individual Permittee
3 costs (see Declaration of Farooq Azim (“Azim Declaration”) in support of this
4 Test Claim) *plus* Union City’s share of the Program Costs. I provide actual FY
5 22/23 costs Program costs and estimated FY 23/24 (which ends June 30, 2024)
6 costs and associated methodology below.

7 9. Union City Share of Program Costs. The Program incurred costs
8 on behalf of the Consortium members in order to comply with MRP3
9 mandates. In my role as Interim Program Manager, I track and coordinate
10 compliance actions taken by the Program on behalf of Consortium members. I
11 investigated the Program’s files and records, including consultant invoices,
12 and interviewed Consortium members leading Program workgroups and
13 subcommittees responsible for implementation of the MRP3, as necessary, to
14 estimate the Program costs. The Program supports compliance work through
15 subcommittees that are facilitated by a team of technical consultants. These
16 consultants also provide technical services, such as the preparation of required
17 reports and implementation of monitoring programs. Consultant invoices
18 represent a mix of specific and general tasks. To estimate the Program costs
19 associated with the specific provisions included in the Test Claim, the
20 following assumptions were made based on my knowledge of the subcommittee
21 work and/or by interviewing the Consortium members who oversee the work of
22 the subcommittees.

23 a. C.3.b.ii(4) and C.3.b.ii.(5) – Consultant invoices characterize
24 support in four general support functions: meetings; training; permittee
25 support; and technical material updates. The MRP3 changes were a
26 significant part of the effort for the permittee support and technical material
27 updates in FY 22/23. I estimate two-thirds of the cost of these subtasks were
28 related to the C.3.b.ii(4) and C.3.b.ii.(5) and are included in the summary.

1 Permittees are required to implement changes to the regulated projects in
2 their new and redevelopment programs. To support this work, the Program
3 revised the C.3 Technical Guidance Manual, prepared informational factsheets
4 on the changes to regulated projects, held a training workshop, and provided
5 technical guidance to members on the changes.

6 b. C.8.d – Consultant support for the planning and
7 implementation of LID Monitoring is separately distinguished on the invoices.
8 One of the consultants supporting this work is sub-consultant to another firm.
9 For these invoices, the sub-consultant breaks out the C.8.d costs, but the
10 prime firm roles up all the C.8 costs and applies a 10% mark-up fee (this is a
11 standard mark-up used by all the prime firms working for the Program).
12 Because sub-task costs are not distinguished on the prime firm’s invoice, the
13 costs were taken from the sub-consultant invoices and the 10% mark-up was
14 added. Permittees are required to implement a monitoring program to
15 measure compliance and the effectiveness of LID facilities. To meet this
16 requirement, the Program collaborated with the other four countywide
17 programs to form and fund the MRP3 required technical advisory group
18 (“TAG”), developed a regional quality assurance plan, identified monitoring
19 locations for permittees in Alameda County, developed a monitoring plan for
20 LID facilities in Alameda County, revised the monitoring and quality
21 assurance plans based on feedback from the TAG, and submitted the plans to
22 the Regional Water Board. The plans were submitted to the Regional Water
23 Board on May 1, 2023. The Program will incur additional costs throughout the
24 MRP3 term to continue LID monitoring.

25 c. C.8.e – See the explanation for C.8.d, which also applies
26 here. Permittees are required to implement a monitoring program to assess
27 the effectiveness of trash control actions and evaluate whether areas
28 determined to be controlled are contributing to trash impacts. To meet this

1 requirement, the Program collaborated with the other four countywide
2 programs to form and fund the MRP3-required TAG, developed a regional
3 quality assurance plan, identified trash monitoring locations and developed a
4 monitoring plan for the selected sites in Alameda County, revised the
5 monitoring and quality assurance plans based on feedback from the TAG, and
6 submitted the plans to the Regional Water Board. The plans were submitted
7 to the Regional Water Board on July 31, 2023. The Program will incur
8 additional costs throughout the MRP3 term to continue trash monitoring.

9 d. C.8.f – See the explanation for C.8.d, which also applies
10 here. Permittees are required to implement a monitoring program to assess
11 inputs of select POCs to the Bay from local tributaries and urban runoff. To
12 meet this requirement, the Program developed and submitted a POC
13 monitoring plan as part of the Urban Creeks Monitoring Report on March 31,
14 2023, and initiated the required monitoring. The Program will incur
15 additional costs throughout the MRP3 term to continue POC monitoring.

16 e. C.10.a.i and C.10.a.ii – Consultant invoices characterize
17 support under one general support task. The MRP3 new requirements and
18 modified higher levels of service were a portion of the support provided in FY
19 22/23 and I estimate 25% of the cost of the general work was in support of the
20 new MRP3 C.10.a.i and C.10.a.ii Trash Reduction Requirements.
21 Additionally, the Geographical Information System (“GIS”) consultant breaks
22 out costs by technical tasks, not permit provisions. The Consortium member
23 who oversees this work estimates that 60% of the GIS support is for C.10
24 support, and in FY 22/23, 70% of that work was related to C.10.a.i and
25 C.10.a.ii . Permittees are required to implement changes to their trash control
26 programs, in particular, the addition of implementing controls for private land
27 drainage areas. To support this work, the Program held subcommittee
28 meetings and prepared guidance for members on the new requirements,

1 updates and modifications were made to GIS maps to support members, and
2 GIS-based inspection applications were developed. The Program will incur
3 additional costs throughout the MRP3 term to continue providing guidance to
4 permittees.

5 f. C.10.e – Provision C.10.e of the MRP3 requires Permittees to
6 collectively develop a Trash Impracticability Report that includes a process for
7 both evaluating impracticability and implementing partial benefit actions to
8 the maximum extent practicable by March 31, 2023. Consultant invoices
9 characterize support under one general support task. The MRP3 new
10 requirements and modified higher levels of service were a portion of the
11 support provided and I estimate 25% of the cost of the general work was in
12 support of the development of the C.10.e Trash Impracticability Report. The
13 Alameda Countywide Program worked collaboratively with the four other
14 countywide programs to fund the development of the Trash Impracticability
15 Report. The Trash Impracticability Report was submitted to the Regional
16 Water Board on March 27, 2023.

17 g. C.11.c/C.12.c – See the explanation for C.8.d, which also
18 applies here. Permittees in Alameda County are collectively required to
19 implement treatment controls on 664 acres of old industrial areas to reduce
20 mercury and PCBs loads over the course of the permit term. According to the
21 MRP3 Fact Sheet at A-255 [Section 7 p. S7-0514], “Because PCBs are more
22 concentrated in some locations, the choice of where to implement control
23 measures may be more influenced by known areas of PCBs contamination.
24 However, the mercury removal benefit can be an important contribution to
25 overall mercury load reductions, and available data indicate that this strategy
26 of focusing on PCBs will yield mercury load reductions in many
27 circumstances.” Thus, the Program conducted these two requirements
28 concurrently and the costs cannot be separated by provision. To meet these

1 requirements, the Program developed the Old Industrial Area Control
2 Measure Plan that included plans and schedules for implementing the
3 required control measures to reduce PCBs and mercury. The plan was
4 submitted in March 2023. Subsequent to submittal, the Program met with
5 Regional Water Board staff and planned revisions to the plan, which are due
6 in March 2024. The Program and Permittees will incur additional costs
7 throughout the MRP3 term to implement the Old Industrial Area Control
8 Measure Plan and to treat 664 acres of old industrial areas in Alameda
9 County.

10 h. C.12.a – See the explanation for C.8.d, which also applies
11 here. Permittees are required to quantify mercury and PCBs loads reduced
12 through the implementation of pollution prevention, source control, green
13 stormwater infrastructure, and other treatment control measures
14 implemented. To meet this requirement, the Program consultants tracked and
15 analyzed data on control measure implementation to calculate loads reduced.
16 The Program will incur additional costs throughout the MRP3 term to track
17 load reductions for Permittees.

18 i. C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j) – The
19 Consortium member who oversees the GIS work estimates that 30% of the GIS
20 support is for C.3 support, and in FY 22/23, 20% of that work was related to
21 C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j). As a modified higher level of
22 service requirement, Permittees are required to implement the Green
23 Infrastructure Plans that they developed under MRP2. To meet this
24 requirement, the Program updated and maintained a GIS platform that allows
25 members to track their green infrastructure projects. The Program will incur
26 additional costs throughout the MRP3 term to maintain the GIS system and
27 Permittees will incur additional cost to update and implement their Green
28 Infrastructure Plans.

1 j. C.17.a – This special project is identified individually on
2 consultant invoices. Permittees are required to develop and submit a regional
3 best management practice report to identify control measures to address non-
4 stormwater discharges associated with unsheltered homeless populations and
5 identify milestones to reduce such discharges. To meet this new MRP3
6 requirement, the Program collaborated with the other four countywide
7 programs on a regional project to develop the required best management
8 practice report, which was submitted with each Permittee’s FY 22/23 annual
9 report. Additionally, each Permittee is required to submit a map identifying,
10 the approximate locations of unsheltered homeless populations, including
11 encampments and other areas where other unsheltered homeless people live
12 relative to storm drains, creeks, and flood control channels. To support its
13 members, the Program worked with County officials to obtain the required
14 geo-located point in time count data, developed an approach for creating the
15 maps, and updated its GIS system to produce the required maps for each of its
16 members. Members submitted the maps with their FY 22/23 annual report.
17 The Permittees will incur additional costs throughout the MRP3 term to
18 implement the best management practices.

19 k. C.20.b – This special project is identified individually on
20 consultant invoices. Permittees are required to develop and submit a cost
21 reporting framework and methodology to guide the preparation of a fiscal
22 analysis of the capital and operation and maintenance costs incurred to
23 comply with MRP3. To meet this new requirement, the Program collaborated
24 with the other four countywide programs on a regional project to develop the
25 cost reporting framework and methodology, which was submitted on June 26,
26 2023. Updates to the cost reporting framework and methodology based on
27 Regional Water Board comments are in process. The Program will
28 additionally provide training for its members on the use of the cost reporting

1 framework and methodology. The Permittees will incur additional costs
2 throughout the MRP3 term to track and report permit implementation costs.

3 1. C.21.b – This special project is identified individually on
4 consultant invoices. Permittees are required to develop and implement an
5 asset management plan to ensure the satisfactory condition of all hard assets
6 constructed during MRP3 and the pervious permit terms pursuant to
7 provisions C.2, C.3, C.10, C.11, C.12, C.13, and C.17. Additionally, Permittees
8 are required to develop and submit a climate change adaptation report to
9 identify potential climate change-related threats to assets and appropriate
10 adaptation strategies. To help Permittees meet these new requirements the
11 Program initiated work on a framework to guide the development of the asset
12 management plans by individual members. The Permittees will incur
13 additional costs throughout the MRP3 term to develop and implement their
14 asset management plans. The Program and Permittees will incur additional
15 costs to develop the climate change adaptation report.

16 m. C.8 continuing costs (MRP1 Test Claim) – See the
17 explanation for C.8.d. However, for some of the subtasks, I estimated that
18 one-half of the effort for Program and Regional meetings was related to C.8 so
19 the effort for these subtasks was reduced by fifty percent. Permittees are
20 required to implement monitoring programs. To meet these requirements, the
21 Program develops and implements an area-wide monitoring program on behalf
22 of its members. The Program develops and implements the required
23 monitoring program and participates in regional monitoring planning
24 meetings and discussions on behalf of its members.

25 n. C.10.b continuing costs (MRP2 Test Claim) – Consultant
26 invoices characterize support under one general support task. The continuing
27 costs were a portion of the support provided and I estimate that 25% of the
28 general work was in support of the continuing costs. Permittees are required

1 to install and maintain full trash capture systems. To support this work, the
2 Program continued support for members by holding subcommittee meetings
3 and providing guidance on the inspection and maintenance of full trash
4 capture system, visual assessments, calculation of discharge reductions and
5 source controls.

6 o. C.11/C.12 continuing costs (MRP2 Test Claim) – There were
7 continuing costs associated with the GIS system to support compliance with
8 these provisions. The Consortium member who oversees this work estimates
9 that 10% of the GIS support is for C.11/C.12 support, and in FY 22/23 100% of
10 that work was related to C.11.e and C.12.f. Permittees are required to
11 implement green infrastructure projects to reduce mercury and PCBs loads.
12 To support its members, the Program continued to maintain a GIS platform
13 for members to track their green infrastructure projects. The GIS platform
14 provides a centralized method to track projects and calculate load reductions.

15 10. Below is summary of the Program’s actual FY 22/23 costs incurred
16 regarding the MRP3 and continuing MRP1 and MRP2 mandates at issue in
17 Union City’s Test Claim. These costs cover the entire FY 22/23. The
18 documentation for the Program costs is set forth in **Exhibit 1** hereto. Union
19 City’s share of Program costs (5.31%) was derived from a formula based in part
20 on the relative area and population of the Program member agencies. The
21 Program sets the annual member contribution based on the MRP
22 implementation costs handled by the Program. The annual member
23 contribution level for FY 22/23 was \$2,535,000 for all Program costs regarding
24 the MRP3, for which Union City’s paid 5.31% or \$134,609. Union City’s share
25 of actual Program costs FY 22/23 (which is the same one-year period of the
26 first year of the MRP3 term) are as follows:

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Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

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Task	Applicable Invoice (see Exhibit 1)	Program Costs	Union City Share of Program Costs (5.31%)
MRP3 New / Increased Programs			
C.3.b.ii(4) and C.3.b.ii.(5)(New or Widening Roads and Road Reconstruction) [New Requirements]	LWA: 436.14-22, 436.14-23, 436.14-24, 436.14-25, 436.14-26, 436.14-27, 436.14-28, 436.14-29, 436.14-30, 436.14-31	\$41,418.96	\$2,199.35
C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j) (Green Infrastructure Retrofits and update their Green Infrastructure Plans) [New and Modified Requirements]	Psomas: 233-187476, 233-188514, 236- 188514, 236-189563, 233-189563, 236- 189861, 236-190853, 236-192070, 236- 193162, 236-193892, 236-195324	\$5,522.16	\$293.23
C.5.f (MS4 Maps) [New Requirement]		None	\$0
C.8.d, C.8.e and C.8.f (New Water Monitoring Requirements) [Modified Higher Levels of Service Requirements]	AMS: 430-21/20, 430- 21/21, 430-21/22, 430- 21/23, 430-21/24, 430- 21/25, 430-21/26, 430- 21/27, 430-21/28, 430- 21/29, 430-21/30, 430- 21/31 LWA: 436.14-22, 436.14-23 ,436.14-24, 436.14-25, 436.14-26, 436.14-27, 436.14-28, 436.14-29, 436.14-30, 436.14-31	\$289,528.06	\$15,373.94
C.10.a.i and C.10.a.ii (Trash Load Reduction and Trash Control on Private Lands) [Both New Requirements and Modified Higher Levels of Service Requirements]	EOA: AL22X-0123, AL22X-0223 AL22X-0323, AL22X- 0423, AL22X-0523, AL22X-0623, AL22X- 0722, AL22X-0822, AL22X-0922, AL22X- 1022, AL22X-1122, AL22X-1222 Psomas: 233-187476, 233-188514, 236-	\$52,362.35	\$2,780.44

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

Task	Applicable Invoice (see Exhibit 1)	Program Costs	Union City Share of Program Costs (5.31%)
	188514, 236-189563, 233-189563, 236- 189861, 236-190853, 236-192070, 236- 193162, 236-193892, 236-195324		
C.10.e (Impracticability Report) [New Requirement]	EOA: AL22X-0123, AL22X-0223, AL22X- 0323, AL22X-0423, AL22X-0523, AL22X- 0623, AL22X-1022, AL22X-1122, AL22X- 1222	\$11,977.25	\$635.99
C.11.c and C.12.c. (Mercury and PCBs Controls on Old Industrial Lands) [Modified Higher Levels of Service Requirements]	LWA: 436.14-22, 436.14-23, 436.14-24, 436.14-25, 436.14-26, 436.14-27, 436.14-28, 436.14-29, 436.14-30, 436.14-31	\$59,429.70	\$3,155.72
C.12.a (Quantify PCBs Reductions) [Modified Higher Levels of Service Requirement]	LWA: 436.14-20, 436.14-21	\$6,619.25	\$351.48
C.15.b.iii(Firefighti ng Discharges Working Group) [New Requirement]	EOA: AL22X-0223, AL22X-0323, AL22X- 0423, AL22X-0523, AL22X-0623,	\$5,275.75	\$280.14
C.17.a (Homelessness) [New Requirement]	AMS: 430-21/24, 430- 21/25, 430-21/26, 430- 21/27, 430-21/28, 430- 21/29, 430-21/30, 430- 21/31	\$42,002.97	\$2,230.36
C.20.b. (Cost Reporting Framework) [New Requirement]	EOA: AL22X-0123, AL22X-0223, AL22X- 0323, AL22X-0423, AL22X-0523, AL22X- 0623, AL22X-0822, AL22X-0922, AL22X- 1022, AL22X-1122, AL22X-1222	\$54,197.00	\$2,877.86
C.21.b (Asset Management Plan) [New Requirement]	AMS: 430-21/28, 430- 21/29, 430-21/30, 430- 21/31	\$8,833.84	\$469.08

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

Task	Applicable Invoice (see Exhibit 1)	Program Costs	Union City Share of Program Costs (5.31%)
TOTAL MRP3 New/Increased FY22/23 Actual Costs			\$30,647.59
Continuing MRP1 and MRP2 Test Claims Provisions			
C.8 (Water Quality Monitoring)	LWA: 436.14-20, 436.14-21, 436.14-22, 436.14-23, 436.14-24, 436.14-25, 436.14-26, 436.14-27, 436.14-28, 436.14-29, 436.14-30, 436.14-31 AMS: 430.21/20, 430.21/21, 430.21/22, 430.21/23, 430.21/24, 430.21/25, 430.21/26, 430.21/27, 430.21/28, 430.21/29, 430-21/30, 430-21/31	\$209,164.61	\$11,106.64
C.10.b (Trash Capture Maintenance)	EOA: AL22X-0123, AL22X-0223, AL22X- 0323, AL22X-0423, AL22X-0523, AL22X- 0623, AL22X-0722, AL22X-0822, AL22X- 0922, AL22X-1022, AL22X-1122, AL22X- 1222	\$30,273.72	\$1,607.53
C.11.e, C.12.f (C.11.c, C.12.c of the MRP2) (Green Infrastructure Projects)	Psomas: 233-187476, 233-188514, 236- 188514, 236-189563, 233-189563, 236- 189861, 236-190853, 236-192070, 236- 193162, 236-193892, 236-195324, 197552, 198218	\$9,203.60	\$488.71
C.12.h (C.12.d in the MRP2) (RAA Plans)		None	\$0

11. As set forth in paragraph 10 above, the total amount of Union City's share of actual Program costs for fiscal year 22/23 for the new programs

1 or higher levels of service for the MRP3 Provisions pled in this Test Claim
 2 (Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j),
 3 C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c,
 4 C.15.b.iii, C.17.a, C.20.b and C.21.b) is \$30,648. As set forth in paragraph 10
 5 above and in the Azim Declaration at paragraph 8, the total amount of Union
 6 City’s actual increased costs for fiscal year 22/23 for the new programs and
 7 higher levels of service for the MRP3 Provisions pled in this Test Claim
 8 (C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f,
 9 C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii,
 10 C.17.a, C.20.b and C.21.b) **\$51,619.**

11 12. The continuing monitoring required under Provision C.8 (i.e.,
 12 monitoring requirements that are not new in the MRP3) is allocated to the
 13 countywide programs roughly based on the relative populations of the
 14 counties.

15 13. The costs for implementation of MRP3 will continue in FY 23/24.
 16 The Program has approved a budget for FY 23/24 and this budget was used to
 17 extrapolate test claim costs. Similar assumptions were made regarding
 18 apportioning non-specific costs as are described in paragraph 9 above. The
 19 Union City share of the estimated FY 23/24 new and continuing Program costs
 20 for MRP3 is **\$49,334.**

New or Modified Higher Levels of Service for MRP3	Estimated FY 23/24 Costs	Brief Description	Anticipated Activities FY 23/24	Basis of FY 23/24 Cost Estimates	Union City Cost Share (5.31%)
C.10.a.i and C.10.a.ii	\$67,750	Trash Reduction Support	Program member support and guidance materials on trash load reductions. GIS support for work.	Program Approved 23/24 Revised Budget	\$3,598
C.10.e	\$0	Regional Trash Impracticability Report	Report was submitted in 22/23.	Program Approved 23/24 Revised Budget	\$0.00

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

New or Modified Higher Levels of Service for MRP3	Estimated FY 23/24 Costs	Brief Description	Anticipated Activities FY 23/24	Basis of FY 23/24 Cost Estimates	Union City Cost Share (5.31%)
C.11c/C.12.c	\$41,250	Old Industrial Area Plan and Support	Annual progress accounting, revisions to the Old Industrial Area Control Measure Plan, initial planning for development of regional control projects.	Program Approved 23/24 Revised Budget	\$2,190
C/11.a/C.12.a	\$16,500	Pollutant of Concern (POC) Load Reduction Report	Annual progress accounting.	Program Approved 23/24 Revised Budget	\$876
C.15.b.iii	\$26,000	Firefighting Discharges work group	Participate in regional workgroup meetings, contribution to regional tasks, collaborating with other organizations. and Program member guidance and support.	Program Approved 23/24 Revised Budget	\$1,381
C.17.a	\$25,000	Unsheltered Homeless work group	Regional coordination and updates to final report, coordination and support for Program member mapping, annual report assistance.	Program Approved 23/24 Revised Budget	\$1,328
C.20.b	\$37,000	Cost Reporting Framework	Revise final framework, Program workgroup meetings, Program member support and training, and regional workgroup meetings.	Program Approved 23/24 Revised Budget	\$1,965
C.21.b	\$68,000	Asset Management Framework	Draft and finalize a framework, Program workgroup meetings, regional coordination, Program member support, coordination.	Program Approved 23/24 Revised Budget	\$3,611
C.3.b.ii(4) and C.3.b.ii(5)	\$34,980	C.3 Regulated Project Support	Program member support and guidance materials on regulated projects, new factsheets, revisions to C.3 Technical Guidance Manual.	Program Approved 23/24 Revised Budget	\$1,857
C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4) and C.3.j.ii.(2)(a)-(j)	\$22,800	Green Infrastructure Planning and Implementation	Special project to evaluate options for alternative compliance programs; initiate regional project for long term green	Program Approved 23/24 Revised Budget	\$1,211

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

New or Modified Higher Levels of Service for MRP3	Estimated FY 23/24 Costs	Brief Description	Anticipated Activities FY 23/24	Basis of FY 23/24 Cost Estimates	Union City Cost Share (5.31%)
			stormwater infrastructure numeric targets and form TAG, and GIS support for Program members.		
C.8.d	\$258,800	LID Monitoring	Monitoring plan revisions, TAG meetings, equipment purchase and installation, conduct sampling events.	Program Approved 23/24 Revised Budget	\$13,742
C.8.e	\$189,000	Trash Monitoring	Monitoring plan revisions, TAG meetings, equipment purchase and installation, conduct sampling events, match for Water Quality Improvement Fund grant.	Program Approved 23/24 Revised Budget	\$10,036
C.8.f	\$142,000	POC Monitoring Support	Planning support, conduct sampling events, contribution to Regional Monitoring Program (RMP).	Program Approved 23/24 Revised Budget	\$7,540
Total	\$929,080				\$49,334

14. As set forth in paragraph 13 above, the total amount of Union City's share of estimated Program costs for fiscal year 23/24 for the new programs or higher levels of service for the MRP3 Provisions pled in this Test Claim (Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21.b) is \$49,334. As set forth in paragraph 13 above and in the Azim Declaration at paragraph 8, the total estimated amount of Union City's increased costs for fiscal year 23/24 for the new programs and higher levels of service for the MRP3 Provisions pled in this Test Claim (Provisions C.3.b.ii(4), C.3.b.ii.(5), C.3.j.ii.(1)(a)-(g), C.3.j.ii.(4), C.3.j.ii.(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e, C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b and C.21) is **\$852,749**.

1 15. Estimated Statewide Costs. MRP3 requirements apply to the 79
2 cities, counties, and flood control districts subject to MRP3. Costs for each of
3 the Permittees will vary depending on a number of factors specific to each of
4 the Permittees. However, the population of each Permittee is a primary
5 determining factor in the cost to comply with MRP3 requirements. In the
6 MRP3, for example, the required mercury and PCBs load reductions are
7 explicitly determined by each agency's population. (MRP3 Provision C.11.a.ii
8 at C.11-1 – 2 and Provision C.12.a.ii at C.12-1 – 2.) Entities with higher
9 populations will tend to have higher levels of trash reduction required to meet
10 the MRP3's required trash reductions. These higher population entities tend
11 to have higher levels of unsheltered homeless populations requiring more
12 engagement by the MS4s to implement best management practices to control
13 associated pollutants. The more extensive municipal infrastructure associated
14 with larger entities will increase costs and effort associated with other new
15 MRP provisions including asset management, cost reporting, and
16 implementing best management practices associated with emergency
17 firefighting discharges. Monitoring requirements in Provision C.8 vary
18 generally based upon the relative populations of the countywide programs. As
19 Union City is a fairly typical Bay Area city, it is reasonable to extrapolate from
20 Union City costs to the entire MRP3 area based upon the relative population
21 of Union City compared to the population of the entire area covered by MRP3.
22 According to the MRP3, Union City's population is 74,107 (MRP3 at
23 Attachment H-2). According to the MRP3, the population for the entire MRP
24 area is 5,917,090 (MRP3 at Attachment H-5). The population of the entire
25 MRP population is approximately 80 times the population of Union City.
26 Based on information obtained from Union City (see Azim Declaration) and
27 extrapolating statewide costs based on the relative population of Union City as
28 compared to the MRP area, I estimate the FY 23/24 statewide costs as follows:

Municipal Regional Stormwater Permit, City of Union City, 6. Declarations (Mathews)

Task	Estimated Union City FY 23/24 Costs ¹	Union City Share of FY 23/24 Program Costs (5.31%)	Total Union City Costs	Estimated FY 23/24 Statewide Costs (80 x Union City)
MRP3 New or Modified Higher Levels of Service Programs	\$803,415	\$49,334	\$852,749	\$68,200,880

16. I investigated the pertinent consultant invoices that were provided by the District and consulted with the Consortium members who oversee the work of the subcommittees to determine the precise date that the Program, acting on behalf of Union City and other members, first incurred increased costs as a result of the new activities and modified existing activities mandated by MRP3. The start of MRP3 coincided with the start of the Program’s fiscal year, July 1, 2022, which is the same date that consultant invoices indicate incurred costs as a result of implementing the new activities and modified existing activities mandated by MRP3.

17. I have personally compiled the information in the tables above related to actual FY 22/23 Program costs for the entire fiscal year and estimates of FY 23/24 Program costs and believe that the information they contain is accurate.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct to the best of my knowledge.

Executed on May 20, 2024, at Berkeley, California.


 SANDRA MATHEWS

5721835.3

¹ The estimated Union City costs for FY 23/24 are set forth the Azim Declaration in support of this Test Claim.

EXHIBIT 1
to Section 6.2
(Mathews Dec)

August 31, 2022

Invoice No. 430-21/20

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: July 1-31, 2022

For Approval by Sharon Gosselin

Program No.	Task Numbers	Work Order	Activity Code		Current Invoice	Budgeted	Cumulative	Remaining
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$53,592.07	\$6,407.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$0	\$22,501.00	\$14,175.00	\$8,326.00
50201	Task 7- C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$5,779.59	\$330,000.00	\$50,866.77	\$279,133.23
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$6,105.00	\$107,000.00	\$6,105.00	\$100,895.00
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$215.00	\$42,000.00	\$215.00	\$41,785.00
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$215.00	\$54,000.00	\$215.00	\$53,785.00
Total:					\$12,314.59	\$1,106,551.00	\$614,206.23	\$492,344.77

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/20

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 7/1/22-7/31/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

Labor	Rate	Subtask 1					Task Total
		Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	24	\$5,160.00				\$9,780.00
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						\$27.50
Staff Scientist-CH	\$115.00						
Adminstrative-DS	\$110.00						
Adminstrative-DC	\$125.00						
<u>Subcontractors</u>							
Kinnetic Environmental (ADH)							\$31,220.09
Bioassessment Services							\$4,251.89
San Jose State University							\$1,000.00
Benjamin Salop			\$360.00				\$360.00
<u>Direct Expenses</u>							
			\$194.42				\$473.12
G&A 10% (Subs only)			\$36.00				\$3,683.20
G&A 15% (ODC's only)			\$29.17				\$70.97
Total Invoiced			\$5,779.59				\$50,866.77
TOTALS:							
Authorized Budget			\$330,000.00				\$330,000.00
Prior Invoiced Amount			\$45,087.18				\$45,087.18
Current Invoice			\$5,779.59				\$5,779.59
Budget Remaining			\$279,133.23				\$279,133.23

Task 7 Amount Due:	\$5,779.59
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/20

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 7/1/22-7/31/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

Labor	Rate	Subtask 1						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	18.5	\$3,977.50					\$3,977.50
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$185.00	11.5	\$2,127.50					\$2,127.50
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00							
Staff Scientist-CH	\$115.00							
Administrative-DS	\$110.00							
Administrative-DC	\$125.00							
<u>Subcontractors</u>								
Kinnetic Environmental (ADH)								
Bioassessment Services								
<u>Direct Expenses</u>								
G&A 10% (Subs only)								
G&A 15% (ODC's only)								
Total Invoiced			\$6,105.00					\$6,105.00
TOTALS:								
Authorized Budget			\$107,000.00					\$107,000.00
Prior Invoiced Amount								
Current Invoice			\$6,105.00					\$6,105.00
Budget Remaining			\$100,895.00					\$100,895.00

Task 8 Amount Due:	\$6,105.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/20

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 7/1/22-7/31/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

Labor	Rate	Subtask 1		Task Total
		Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	1	\$215.00	\$215.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH)				
Bioassessment Services				
Direct Expenses				
G&A 10% (Subs only)				
G&A 15% (ODC's only)				
Total Invoiced			\$215.00	\$215.00
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount				
Current Invoice			\$215.00	\$215.00
Budget Remaining			\$41,785.00	\$41,785.00

Task 9 Amount Due:	\$215.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/20

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 7/1/22-7/31/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

Labor	Rate	Subtask 1						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	1	\$215.00					\$215.00
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$185.00							
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00							
Staff Scientist-CH	\$115.00							
Administrative-DS	\$110.00							
Administrative-DC	\$125.00							
<u>Subcontractors</u>								
Kinnetic Environmental (ADH)								
Bioassessment Services								
<u>Direct Expenses</u>								
G&A 10% (Subs only)								
G&A 15% (ODC's only)								
Total Invoiced			\$215.00					\$215.00
TOTALS:								
Authorized Budget			\$54,000.00					\$54,000.00
Prior Invoiced Amount								
Current Invoice			\$215.00					\$215.00
Budget Remaining			\$53,785.00					\$53,785.00

Task 10 Amount Due:	\$215.00
----------------------------	-----------------

U-HAUL® Receipt



In-Town Return (In)

Contract No: 24794913
Tuesday, July 12, 2022 4:42 PM

U-HAUL MOVING & STORAGE OF
LIVERMORE
815048

3429 GARDELLA PLAZA
LIVERMORE, CA 94550

(925) 455-1100

Customer Name:
Paul Salob
4749 Bennett Drive STE L
LIVERMORE, CA 94551

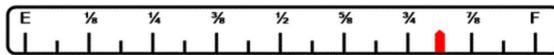
Cust Ph - EMail:
(510) 323-6523
stafford@amarine.com

Authorized Driver(s): Paul Salob

Corporate Account: APPLIED MARINE SCIENCES,
INC

Rental Date/Time: 7/12/2022 8:24 AM
Return Date/Time: 7/12/2022 4:40 PM
Chargeable Rental Periods: 1

Equipment	MI Out	MI In	MI Rate	MI Charge	Coverage	Missing/Damage Charge	Rental Rate	Rental Charge	Actual Charges
BE - Cargo Van BE2058G AL08601-AZ	13444.0	13570.0	\$0.79 x 126.00	\$99.54	--	\$0.00	\$19.95	\$19.95	\$119.49



Corporate Account # 744599224471
PONumber:
Auth: 621001

Environmental Fee: \$1.00
Subtotal: \$120.49
Rental Tax: \$12.35
Total Rental Charges: \$132.84

Corporate Move Payment: \$132.84
Net Paid Today: \$132.84

- I confirm that during the term of my rental there was not an accident involving the rented U-Haul equipment and no incidence where this equipment struck or otherwise caused damage to any person or property either while on a public road or private property. There was no injury or damage sustained by me or any other drivers or passengers of this equipment.
- Pickup and Van Best Rate Guarantee:** At the end of your rental we will calculate the best deal for you. Be it our most popular (\$19.95 plus mileage rate) or (a combination of the daily, weekly, and monthly rental rates with included mileage). Monthly rate is for 28 days.

Zachary Acton

X _____
Paul Salob

U-Haul Signature - (Zachary Acton)

MobileContractClose

430-7

RENTAL VAN
FUEL

4904 Southfront Rd
Livermore CA 94551

DBA SOUTH FRONT GAS
09480831
4904 SOUTH FRONT S
LIVERMORE, CA
94551
07/12/2022 787241455
06:03:51 PM

XXXX XXXXXX X2027
AMEX
INVOICE 180159
AUTH 00-806260
REF0712180159027

PUMP# 5

REGULAR 6.963G
PRICE/GAL \$5.999

FUEL TOTAL \$ 41.77

TOTAL = \$ 41.77

CREDIT \$ 41.77

AMERICAN EXPRESS

AID: A000000025010801
TC: 6B606915AFE8F2DC
COMPLETION
Entry: CHIP
Batch: 39 Seq Num: 13
Term ID: 5
ZIP ENTERED
Workstation ID: 00
Tell us about
your visit for a
chance to win
a gas gift card!
Gasfeedback.com

Cardholder Copy

TO SUBMIT A RESUME!
Media

430-7
ICE

SAFEWAY

Store 1257 Dir Denise Medina
Main:(925) 455-2520 Rx:(925) 455-2522
4495 First Street
LIVERMORE CA 94550

REFRIG/FROZEN

3 QTY ARTIC GLAC 17.97 B
TAX 1.84
**** BALANCE 19.81

Credit Purchase 07/12/22 09:16
CARD # *****2027
REF: 901643420270 AUTH: 00824487

PAYMENT AMOUNT 19.81

AL AMERICAN EXPRESS
AID A000000025010801
TVR 0800008000
TSI E800

AMEX 19.81

CHANGE 0.00
TOTAL NUMBER OF ITEMS SOLD = 3
07/12/22 09:16 1257 6 39 0653

Now Hiring!
Inquire at Customer Service

POINTS EARNED TODAY
Base Points 17
Total 17

Points Towards Next Reward 5 of 100

REWARDS AVAILABLE 8

YOUR CASHIER TODAY WAS YADIRA



July 13, 2022

INVOICE

PSA # 2022-0002

Diane Stafford
Applied Marine Sciences
4749 Bennett Drive, Suite L
Livermore, CA 94551

Re: Sampling Support for ACCWP Dry Season Pesticides and Toxicity Monitoring

My expenses associated with monitoring conducted on July 12, 2022 are identified below.

Conduct Monitoring (9 hrs @ \$40.00 per hr) \$ 360.00

Expense reimbursement

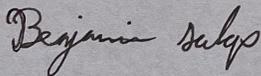
None

TOTAL DUE THIS INVOICE.....\$360.00

Make check payable to: Benjamin Salop
Remit payment to: 121 Glen Eden Ave
Oakland, CA 94611

Please contact me with any questions on this invoice.

Best,



Benjamin Salop

October 3, 2022

Invoice No. 430-21/21

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: August 1-31, 2022

For Approval by Sharon Gosselin

Program No.	Task Numbers	Work Order	Activity Code		Current Invoice	Budgeted	Cumulative	Remaining
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$53,592.07	\$6,407.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$0	\$22,501.00	\$14,175.00	\$8,326.00
50201	Task 7 - C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$6,692.50	\$330,000.00	\$57,559.27	\$272,440.73
50201	Task 8 - CW8-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$4,285.35	\$107,000.00	\$10,390.35	\$96,609.65
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$1,505.00	\$42,000.00	\$1,720.00	\$40,280.00
50201	Task 10 - CW8.d.l.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$215.00	\$54,000.00	\$430.00	\$53,570.00
Total:					\$12,697.85	\$1,106,551.00	\$626,904.08	\$479,646.92

okay to pay G33

Sg

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142



Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/21

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 8/1/22-8/31/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

Labor	Rate	Subtask 1						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	31	\$6,665.00					\$16,445.00
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$185.00							
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00	0.25	\$27.50					\$55.00
Staff Scientist-CH	\$115.00							
Administrative-DS	\$110.00							
Administrative-DC	\$125.00							
<u>Subcontractors</u>								
Kinnetic Environmental (ADH)								\$31,220.09
Bioassessment Services								\$4,251.89
San Jose State University								\$1,000.00
Benjamin Salop								\$360.00
<u>Direct Expenses</u>								
								\$473.12
G&A 10% (Subs only)								
								\$3,683.20
G&A 15% (ODC's only)								
								\$70.97
Total Invoiced			\$6,692.50					\$57,559.27
TOTALS:								
Authorized Budget			\$330,000.00					\$330,000.00
Prior Invoiced Amount			\$50,866.77					\$50,866.77
Current Invoice			\$6,692.50					\$6,692.50
Budget Remaining			\$272,440.73					\$272,440.73

Task 7 Amount Due:	\$6,692.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/21

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 8/1/22-8/31/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

		Subtask 1			Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00	17.5	\$3,762.50		\$7,740.00
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00	0.5	\$92.50		\$2,220.00
Senior Scientist-TV	\$120.00	3.5	\$420.00		\$420.00
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
Kinnetic Environmental (ADH)					
Bioassessment Services					
Direct Expenses					
			\$9.00		\$9.00
G&A 10% (Subs only)					
G&A 15% (ODC's only)					
			\$1.35		\$1.35
Total Invoiced			\$4,285.35		\$10,390.35
TOTALS:					
Authorized Budget			\$107,000.00		\$107,000.00
Prior Invoiced Amount			\$6,105.00		\$6,105.00
Current Invoice			\$4,285.35		\$4,285.35
Budget Remaining			\$96,609.65		\$96,609.65

Task 8 Amount Due:	\$4,285.35
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/21

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 8/1/22-8/31/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

		<u>Subtask 1</u>					Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	7	\$1,505.00				\$1,720.00
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						
Staff Scientist-CH	\$115.00						
Adminstrative-DS	\$110.00						
Adminstrative-DC	\$125.00						
<u>Subcontractors</u>							
Kinnetic Environmental (ADH)							
Bioassessment Services							
<u>Direct Expenses</u>							
G&A 10% (Subs only)							
G&A 15% (ODC's only)							
Total Invoiced			\$1,505.00				\$1,720.00
TOTALS:							
Authorized Budget			\$42,000.00				\$42,000.00
Prior Invoiced Amount			\$215.00				\$215.00
Current Invoice			\$1,505.00				\$1,505.00
Budget Remaining			\$40,280.00				\$40,280.00

Task 9 Amount Due:	\$1,505.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/21

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 8/1/22-8/31/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

		Subtask 1					Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	1	\$215.00				\$430.00
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						
Staff Scientist-CH	\$115.00						
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
<u>Subcontractors</u>							
Kinnetic Environmental (ADH)							
Bioassessment Services							
<u>Direct Expenses</u>							
G&A 10% (Subs only)							
G&A 15% (ODC's only)							
Total Invoiced			\$215.00				\$430.00
TOTALS:							
Authorized Budget			\$54,000.00				\$54,000.00
Prior Invoiced Amount			\$215.00				\$215.00
Current Invoice			\$215.00				\$215.00
Budget Remaining			\$53,570.00				\$53,570.00

Task 10 Amount Due:	\$215.00
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October 12, 2022

Invoice No. 430-21/22

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: September 1-30, 2022

For Approval by Sharon Gosselin

Program No.	Task Numbers	Work Order	Activity Code		Current Invoice	Budgeted	Cumulative	Remaining
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$53,592.07	\$6,407.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$0	\$22,501.00	\$14,175.00	\$8,326.00
50201	Task 7- C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$26,121.04	\$330,000.00	\$83,680.31	\$246,319.69
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$9,871.29	\$107,000.00	\$20,261.64	\$86,738.36
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$537.50	\$42,000.00	\$2,257.50	\$39,742.50
50201	Task 10 - CW8.d.l.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$3,553.97	\$54,000.00	\$3,983.97	\$50,016.03
Total:					\$40,083.80	\$1,106,551.00	\$666,987.88	\$439,563.12

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

okay to pay G33

Sg

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/22

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 9/1/22-9/30/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

Labor	Rate	Subtask 1					Task Total
		Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	25.5	\$5,482.50				\$21,927.50
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00	12.25	\$1,347.50				\$1,402.50
Staff Scientist-CH	\$115.00						
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
Subcontractors							
Kinnetic Environmental (ADH)							\$31,220.09
Bioassessment Services							\$4,251.89
San Jose State University							\$1,000.00
Benjamin Salop							\$360.00
Caltest			\$17,488.30				\$17,488.30
Direct Expenses			\$46.88				\$520.00
G&A 10% (Subs only)			\$1,748.83				\$5,432.03
G&A 15% (ODC's only)			\$7.03				\$78.00
Total Invoiced			\$26,121.04				\$83,680.31
TOTALS:							
Authorized Budget			\$330,000.00				\$330,000.00
Prior Invoiced Amount			\$57,559.27				\$57,559.27
Current Invoice			\$26,121.04				\$26,121.04
Budget Remaining			\$246,319.69				\$246,319.69

Task 7 Amount Due:	\$26,121.04
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/22

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 9/1/22-9/30/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00	30	\$6,450.00			\$14,190.00
Principal Scientist-MB	\$165.00					\$2,220.00
Principal Scientist-AM	\$185.00					\$2,220.00
Senior Scientist-TV	\$120.00	16.25	\$1,950.00			\$2,370.00
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00	8.25	\$907.50			\$907.50
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
Kinnetic Environmental (ADH)						
Bioassessment Services						
Direct Expenses			\$490.24			\$499.24
G&A 10% (Subs only)						
G&A 15% (ODC's only)			\$73.55			\$74.90
Total Invoiced			\$9,871.29			\$20,261.64
TOTALS:						
Authorized Budget			\$107,000.00			\$107,000.00
Prior Invoiced Amount			\$10,390.35			\$10,390.35
Current Invoice			\$9,871.29			\$9,871.29
Budget Remaining			\$86,738.36			\$86,738.36

Task 8 Amount Due:	\$9,871.29
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/22

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 9/1/22-9/30/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

Labor	Rate	Subtask 1						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	2.5	\$537.50					\$2,257.50
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$185.00							
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00							
Staff Scientist-CH	\$115.00							
Administrative-DS	\$110.00							
Administrative-DC	\$125.00							
Subcontractors								
Kinnetic Environmental (ADH)								
Bioassessment Services								
Direct Expenses								
G&A 10% (Subs only)								
G&A 15% (ODC's only)								
Total Invoiced			\$537.50					\$2,257.50
TOTALS:								
Authorized Budget			\$42,000.00					\$42,000.00
Prior Invoiced Amount			\$1,720.00					\$1,720.00
Current Invoice			\$537.50					\$537.50
Budget Remaining			\$39,742.50					\$39,742.50

Task 9 Amount Due:	\$537.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/22

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 9/1/22-9/30/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

		Subtask 1			Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00	16.5	\$3,547.50		\$3,977.50
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
Kinnetic Environmental (ADH)					
Bioassessment Services					
Direct Expenses			\$5.63		\$5.63
G&A 10% (Subs only)					
G&A 15% (ODC's only)			\$0.84		\$0.84
Total Invoiced			\$3,553.97		\$3,983.97
TOTALS:					
Authorized Budget			\$54,000.00		\$54,000.00
Prior Invoiced Amount			\$430.00		\$430.00
Current Invoice			\$3,553.97		\$3,553.97
Budget Remaining			\$50,016.03		\$50,016.03

Task 10 Amount Due:	\$3,553.97
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Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
S C I E N C E S

Sunday, September 25, 2022

Page 1

Name: Ellen Goldenberg	Report Dates:	Report Amounts:
Description: 430 ACCWP temp logger retrieval	Begin Date: 9/20/2022	Advance Amount: 0.00
Notes: Travel to eight sites in Alameda County	End Date: 9/20/2022	Total Amount: 46.88

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print
9/20/2022	430	ACCWP	Creek Status Monitoring - Implementation	Mileage		75.00	0.6250	46.88			£	£
								Total:	46.88			
								Advance:	0.00			
								Credit Card:	0.00			
								Personal:	0.00			
								Net Due:	46.88			

Employee Signature

Date

Manager Signature

Date

Approval:	Name	Approved
Supervisor:	Paul Salop	09/23/22
Accounting:	Dovlynn Cammack	09/25/22



Invoice

Invoice No: 636520

Lab Order : X070521

Invoice Date : 9/21/2022

Project : ACCWP - DRY SEASON CHEMISTRY

Received : 7/13/2022

Sampled : CLIENT

Invoice Terms ** : Net 30

Purchase Auth/PO : 3377

Invoice To : Diane Stafford
Applied Marine Sciences
4749 Bennett Dr
Suite L
Livermore, CA 94551

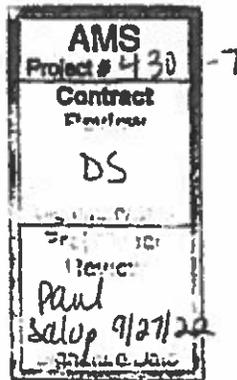
Report To : Paul Salop 925-373-7142
Applied Marine Sciences, Inc.
4749 Bennett Dr
Suite L
Livermore, CA 94551

Description	T A T	Qty	PerUnit	Total Cost
8321 Pesticides by HPLC (3 sample min)	Standard	2 @	459.00	918.00
Electronic Deliverable	Standard	2 @	45.00	90.00
Grain Size Analysis	Standard	2 @	140.00	280.00
PAH Extended List, LL (3 sample min)	Standard	2 @	535.00	1,070.00
Pyrethroids & Fipronil (3 sample min)	Standard	2 @	535.00	1,070.00
Total Organic Carbon (3 sample minimum)	Standard	2 @	95.00	190.00
Total,6020,SO,ICPMS	Standard	2 @	286.00	572.00

Please reference the invoice number on your remittance.

Invoice Total \$4,190.00

Remit To: CALTEST ANALYTICAL LABORATORY
1885 North Kelly Road
Napa, California 94558
(707) 258-4000



** Payment due 30 days from Invoice Date – Past Due Balances subject to a FINANCE CHARGE of 1.5% per month **

*** Securely pay invoices online using VISA, Master Card or American Express at CaltestLabs.com ***





Invoice

Invoice No: 635454

Lab Order : X040037

Invoice Date : 8/8/2022

Project : ACCWP - RMC CREEK STATUS MONIT

Received : 4/26/2022

Sampled : CLIENT

Invoice Terms ** : Net 30

Purchase Auth/PO : 3281

Invoice To : Diane Stafford
Applied Marine Sciences
4749 Bennett Dr
Suite L
Livermore, CA 94551

Report To : Paul Salop
Applied Marine Sciences, Inc.
4749 Bennett Dr
Suite L
Livermore, CA 94551

925-373-7142

Description	TAT	Qty	PerUnit	Total Cost
Ammonia as Nitrogen (NH3-N)	Standard	22 @	43.35	953.70
Ash-Free Dry Weight	Standard	22 @	48.00	1,056.00
Chloride, by Ion Chromatography	Standard	22 @	46.75	1,028.50
Chlorophyll	Standard	22 @	98.00	2,156.00
Electronic Deliverable	Standard	22 @	15.00	330.00
Nitrate as N (NO3-N)	Standard	22 @	46.75	1,028.50
Nitrite as N (NO2-N), Low Level	Standard	22 @	59.50	1,309.00
Nitrogen, Total Kjeldahl (TKN)	Standard	22 @	68.85	1,514.70
Phosphate as P, Ortho, Dissolved (LL)	Standard	24 @	53.55	1,285.20
Silica, Total, ICPMS-CM Analysis	Standard	22 @	62.90	1,383.80
Total Phosphorus as P (LL)	Standard	22 @	56.95	1,252.90

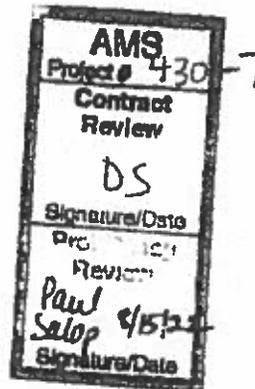
Please reference the invoice number on your remittance.

Invoice Total

\$13,298.30

Remit To: CALTEST ANALYTICAL LABORATORY

1885 North Kelly Road
Napa, California 94558
(707) 258-4000



** Payment due 30 days from Invoice Date -- Past Due Balances subject to a FINANCE CHARGE of 1.5% per month **

*** Securely pay invoices online using VISA, Master Card or American Express at CaltestLabs.com ***



Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
S C I E N C E S

Sunday, September 25, 2022
Page 1

Name: Ellen Goldenberg	Report Dates:	Report Amounts:
Description: 430 ACCWP POCx Sampling	Begin Date: 9/22/2022	Advance Amount: 0.00
Notes: Travel from Livermore to and around Oakland and back.	End Date: 9/22/2022	Total Amount: 50.00

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print
9/22/2022	430	ACCWP	FY23 POCs	Mileage		80.00	0.6250	50.00			£	£
								Total:	50.00			
								Advance:	0.00			
								Credit Card:	0.00			
								Personal:	0.00			
								Net Due:	50.00			

Employee Signature	Date	
Manager Signature	Date	

Approval:	Name	Approved
Supervisor:	Paul Salop	09/23/22
Accounting:	Dovlynn Cammack	09/25/22

Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
 S C I E N C E S

Saturday, September 24, 2022
 Page 1

Name: Theresa Venello	Report Dates:	Report Amounts:	
Description: 430 ACCWP POC sampling	Begin Date: 9/22/2022	Advance Amount: 0.00	
Notes: Travel to and from Oakland 9/22-9/23 and parking. The PDF has all receipts for both days.	End Date: 9/23/2022	Total Amount: 15.00	

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prnbl
9/22/2022	430	ACCWP	FY23 POCs	Travel		0.00	0.0000	7.50			£	£
9/23/2022	430	ACCWP	FY23 POCs	Travel		0.00	0.0000	7.50			£	£
Total:								15.00				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								15.00				

Employee Signature	Date
Manager Signature	Date

Approval:	Name	Approved
Supervisor:	Paul Salop	09/23/22
Accounting:	Dovlynn Cammack	09/24/22

Name: Theresa Venello
Notes:

Date	ID	Project Description	Phase	Expense Item	Payee	Credit Card	Personal
9/22/2022	430	ACCWP	FY23 POCs	Travel			£
Employee Notes: Bart parking and to/from Concord and Oakland							
9/23/2022	430	ACCWP	FY23 POCs	Travel			£
Employee Notes: Bart parking and to/from Concord and Oakland							

4:19



\$2.25

Concord Station → MacArthur Station

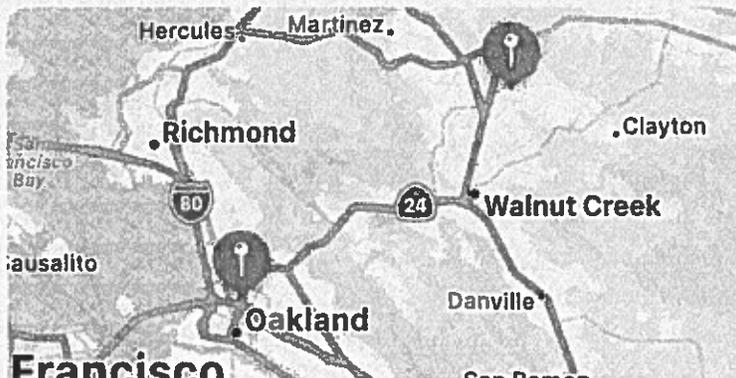
Train

9/22/22, 8:28 AM

Paid with Clipper card

Cash Value

\$2.25



Concord Station → MacArthur Station

Merchant location was determined from transaction details. Allow Wallet to use your precise location to improve merchant information. [Go to Settings...](#)

4:19



\$2.25

MacArthur Station → Concord Station

Train

9/22/22, 4:33 PM

Paid with Clipper card

Cash Value	\$2.25
------------	--------



MacArthur Station → Concord Station

Merchant location was determined from transaction details. Allow Wallet to use your precise location to improve merchant information. Go to Settings...

4:19



\$2.25

Concord Station → MacArthur Station

Train

9/23/22, 8:35 AM

Paid with Clipper card

Cash Value

\$2.25



Concord Station → MacArthur Station

Merchant location was determined from transaction details. Allow Wallet to use your precise location to improve merchant information. Go to Settings...

4:19



\$2.25

MacArthur Station → Concord Station

Train

9/23/22, 2:41 PM

Paid with Clipper card

Cash Value

\$2.25



MacArthur Station → Concord Station

Merchant location was determined from transaction details. Allow Wallet to use your precise location to improve merchant information. Go to Settings...



PAYMENT TYPE
All 

Sep 23, 2022 **\$3.00** 

SINGLE PAYMENT

VISA ENDING IN 3281 **\$3.00**
ORDER ID 09232022-DLY621711-33-2582

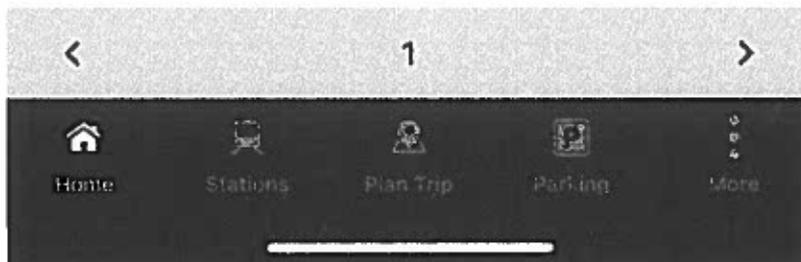
DAILY PARKING Concord | #2582
TRANSACTION ID jqjfp44k

Sep 22, 2022 **\$3.00** 

SINGLE PAYMENT

VISA ENDING IN 3281 **\$3.00**
ORDER ID 09222022-DLY618919-33-2449

DAILY PARKING Concord | #2449
TRANSACTION ID 6cbe19y9



Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
S C I E N C E S

Sunday, September 25, 2022

Page 1

Name: Paul Salop	Report Dates:	Report Amounts:	
Description: 430 ACCWP POCx Sampling	Begin Date: 9/22/2022	Advance Amount: 0.00	
Notes:	End Date: 9/23/2022	Total Amount: 18.75	

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print
9/22/2022	430	ACCWP	FY23 POCs	Mileage	Salop	16.00	0.6250	10.00			£	£
9/23/2022	430	ACCWP	FY23 POCs	Mileage	Salop	14.00	0.6250	8.75			£	£
Total:								18.75				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								18.75				

Employee Signature	Date	
Manager Signature	Date	

Approval:	Name	Approved
Supervisor	Paul Salop	09/23/22
Accounting	Dovlynn Cammack	09/25/22

Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
 S C I E N C E S

Sunday, October 2, 2022
 Page 1

Name: Paul Salop Description: 430 POCx shipping Notes: Ice for shipping samples to lab				Report Dates: Begin Date: 9/26/2022 End Date: 9/26/2022				Report Amounts: Advance Amount: 0.00 Total Amount: 6.60													
Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print									
9/26/2022	430	ACCWP	FY23 POCs	Lab Supply	Safeway	1.00	6.6000	6.60		American Express	£	£									
								Total:		6.60											
								Advance:		0.00											
								Credit Card:		-6.60											
								Personal:		0.00											
								Net Due:		0.00											
_____ Employee Signature					_____ Date																
_____ Manager Signature					_____ Date																
											<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Approval:</th> <th>Name</th> <th>Approved</th> </tr> <tr> <td>Supervisor:</td> <td>Dovlynn Cammack</td> <td>10/02/22</td> </tr> <tr> <td>Accounting:</td> <td>Dovlynn Cammack</td> <td>10/02/22</td> </tr> </table>		Approval:	Name	Approved	Supervisor:	Dovlynn Cammack	10/02/22	Accounting:	Dovlynn Cammack	10/02/22
Approval:	Name	Approved																			
Supervisor:	Dovlynn Cammack	10/02/22																			
Accounting:	Dovlynn Cammack	10/02/22																			

SAFEWAY

Store 1257 Dir Denise Medina
Main:(925) 455-2520 Rx:(925) 455-2522
4495 First Street
LIVERMORE CA 94550

REFRIG/FROZEN

ARTIC GLACIER ICE	6.99 B
TAX	0.61
**** BALANCE	6.60

Credit Purchase 09/26/22 08:02
CARD # *****2027
REF: 360260420270 AUTH: 00846001

PAYMENT AMOUNT 6.60

AL AMERICAN EXPRESS
AID A000000025010801
TVR 0800008000
TSI E800

AMEX	6.60
CHANGE	0.00
TOTAL NUMBER OF ITEMS SOLD *	1
09/26/22 08:02 1257 96 31	8896

Now Hiring at this Store Location!
Inquire at Customer Service

POINTS EARNED TODAY

Base Points 5
Total 5

Points Towards Next Reward 5 of 100

YOUR CASHIER TODAY WAS SELF



00125709600312209260802

Thank you for shopping Safeway!
For SAFEWAY FOR U questions call
877-276-9637 or Safeway.com/foru

430-8

- [Account Summary](#)
- [Search/Download](#)
- [My Options](#)
- [Message Center](#)

Tracking ID Details

[Back](#)

Tracking ID Summary

[Help](#) [Hide](#)

Billing Information

Tracking ID no.	770036580052
Invoice no.	5-509-47248
Account no.	1448-0745-8
Bill date	09/26/2022
Total Billed	\$399.89
Tracking ID Balance due	\$0.00
Status	Paid CC

Messages

Distance Based Pricing, Zone 4
Fuel Surcharge - FedEx has applied a fuel surcharg [Read More](#)

[View Invoice History](#)
[View signature proof of delivery](#)

Transaction Details

[Help](#) [Hide](#)

Sender Information

Dovlynn Cammack
APPLIED MARINE SCIENCES, INC
4749 Bennett Drive
Suite L
LIVERMORE CA 94551
US

Recipient Information

Kelley Lovejoy
ALS Global
1317 S 13TH AVE
KELSO WA 98828
US

Shipment Details

Ship date	09/26/2022
Tendered date	09/26/2022
Payment type	Shipper
Service type	FedEx Priority Overnight
Zone	04
Package type	Customer Packaging
Rated weight	50.00lbs
Pieces	1
Rated method	1
Meter No.	4857903
Declared value	

Charges

Transportation Charge	347.27
Fuel Surcharge	82.43
DAS Comm	3.55
Courier Pickup Charge	4.00
Discount	-17.36
Total charges	\$399.89

Original Reference

Customer reference no.	430-8
Department no.	
Reference #2	
Reference #3	

Proof of Delivery

Delivery date	2022-09-27T09:54:0009:54
Service area code	AA
Signed by	Z.HALLANDER

[View signature proof of delivery](#)

[Notify user](#) [Dispute](#)

[Back](#)

OUR COMPANY

Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
 S C I E N C E S

Saturday, September 24, 2022

Page 1

Name: Paul Salop		Report Dates:		Report Amounts:	
Description: 430 ACCWP LID site recons		Begin Date 9/15/2022		Advance Amount 0.00	
Notes: within Oakland		End Date 9/15/2022		Total Amount 5.63	

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print
9/15/2022	430	ACCWP	FY 23 LID	Mileage		9.00	0.6250	5.63			E	E
								Total:		5.63		
								Advance:		0.00		
								Credit Card:		0.00		
								Personal:		0.00		
								Net Due:		5.63		

Employee Signature	Date	
Manager Signature	Date	

Approval:	Name	Approved
Supervisor:	Paul Salop	09/15/22
Accounting:	Dovlynn Cammack	09/15/22

November 21, 2022

Invoice No. 430-21/23

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: October 1-31, 2022

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$53,592.07	\$6,407.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$0	\$22,501.00	\$14,175.00	\$8,326.00
50201	Task 7- C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$61,614.02	\$330,000.00	\$145,294.33	\$184,705.67
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$2,833.81	\$107,000.00	\$23,095.45	\$83,904.55
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$1,182.50	\$42,000.00	\$3,440.00	\$38,560.00
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$9,791.42	\$54,000.00	\$13,775.39	\$40,224.62
Total:					\$75,421.76	\$1,106,551.00	\$742,409.64	\$364,141.36

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

okay to pay G33

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/23

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 10/1/22-10/31/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	11.5	\$2,472.50	\$24,400.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$1,402.50
Staff Scientist-TV	\$120.00	15.75	\$1,890.00	\$1,890.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental			\$1,371.84	\$32,591.93
Bioassessment Services				\$4,251.89
San Jose State University			\$1,037.50	\$2,037.50
Benjamin Salop				\$360.00
Ecoanalysts			\$31,437.00	\$31,437.00
Caltest				\$17,488.30
Pacific Ecorisk			\$18,200.50	\$18,200.50
Direct Expenses				\$520.00
G&A 10% (Subs only)				\$5,204.68
G&A 15% (ODC's only)				\$78.00
Total Invoiced			\$61,614.02	\$145,294.33
TOTALS:				
Authorized Budget			\$330,000.00	\$330,000.00
Prior Invoiced Amount			\$83,680.31	\$83,680.31
Current Invoice			\$61,614.02	\$61,614.02
Budget Remaining			\$184,705.67	\$184,705.67

Task 7 Amount Due:	\$61,614.02
---------------------------	--------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/23

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 10/1/22-10/31/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	13	\$2,795.00	\$16,985.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00			\$2,370.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
San Jose State University				
Kinnetic Environmental				
Pacific Ecorisk				
Direct Expenses			\$33.75	\$532.99
G&A 10% (Subs only)				
G&A 15% (ODC's only)			\$5.06	\$79.96
Total Invoiced			\$2,833.81	\$23,095.45
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$20,261.64	\$20,261.64
Current Invoice			\$2,833.81	\$2,833.81
Budget Remaining			\$83,904.55	\$83,904.55

Task 8 Amount Due:	\$2,833.81
---------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/23

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 10/1/22-10/31/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	5.5	\$1,182.50	\$3,440.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH)				
Bioassessment Services				
Direct Expenses				
G&A 10% (Subs only)				
G&A 15% (ODC's only)				
Total Invoiced			\$1,182.50	\$3,440.00
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount			\$2,257.50	\$2,257.50
Current Invoice			\$1,182.50	\$1,182.50
Budget Remaining			\$38,560.00	\$38,560.00

Task 9 Amount Due:	\$1,182.50
---------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/23

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 10/1/22-10/31/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	41	\$8,815.00	\$12,792.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00	2.5	\$462.50	\$462.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental Bioassessment Services			\$448.90	\$448.90
Direct Expenses				
			\$17.50	\$23.13
G&A 10% (Subs only)			\$44.89	\$44.89
G&A 15% (ODC's only)			\$2.63	\$3.47
Total Invoiced			\$9,791.42	\$13,775.39
TOTALS:				
Authorized Budget			\$54,000.00	\$54,000.00
Prior Invoiced Amount			\$3,983.97	\$3,983.97
Current Invoice			\$9,791.42	\$9,791.42
Budget Remaining			\$40,224.62	\$40,224.62

Task 10 Amount Due:	\$9,791.42
----------------------------	-------------------



Name: Paul Salop Description: 430-8 P&T Recons Notes: Recon 3 prospective monitoring sites	Report Dates: Begin Date 10/5/2022 End Date 10/5/2022	Report Amounts: Advance Amount 0.00 Total Amount 33.75
---	--	---

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
10/5/2022	430	ACCWP	FY23 POCs	Mileage		54.00	0.6250	33.75			£	£
Total:								33.75				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								33.75				

 Employee Signature Date

 Manager Signature Date

Approval:	Name	Approved
Supervisor:	Dovlynn Cammack	10/06/22
Accounting:	Dovlynn Cammack	10/06/22



Name: Paul Salop	Report Dates:	Report Amounts:
Description: 430-10 recons	Begin Date 10/21/2022	Advance Amount 0.00
Notes: Site visits within Oakland for LID monitoring	End Date 10/21/2022	Total Amount 17.50

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
10/21/2022	430	ACCWP	FY 23 LID	Mileage	Paul Salop	28.00	0.6250	17.50			£	£
								Total:		17.50		
								Advance:		0.00		
								Credit Card:		0.00		
								Personal:		0.00		
								Net Due:		17.50		

 Employee Signature

 Date

 Manager Signature

 Date

Approval:	Name	Approved
Supervisor:	Paul Salop	10/27/22
Accounting:	Dovlynn Cammack	10/28/22



210 N. Fourth Street, 3rd Floor, San Jose, CA 95112
<https://www.sjsu.edu/researchfoundation/>

INVOICE

199 Task 3 \$1,037.50
430 Task 7 \$1,037.50

Bill to: Applied Marine Sciences Attn: Paul Salop <salop@amarine.com> 4749 Bennett Dr., Ste. L Livermore, CA 94551		Invoice #: AR023750 Invoice Date: 10/10/2022 Customer ID: C0001138 SJSURF A/C #: 34-1509-0010 Object Code: 06100		
QT	Description	Rate \$	Acct #	Amount in US \$
1.0	Quarterly Data Management Services	\$ 2,075.00		\$ 2,075.00
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
	CCLEAN and ACCWP RMC Data Management Services - 2022 Q3			
	P.I. Marco Sigala			
1.0	T/Hrs	TOTAL AMOUNT DUE		\$ 2,075.00

Prepared by: Michael Lok, AR Accountant

DocuSigned by:

Hoang Tran

10/12/2022

Approved by:

Hoang Tran
 Controller, 408-924-1420
 Hoang.Tran@sjsu.edu

Date

<u>TO PAY BY WIRE TRANSFER OR ACH</u>		<u>TO PAY BY CHECK</u>	
Bank Name:	Wells Fargo	Make Checks Payable & Mail to :	
Bank Address:	420 Montgomery St., San Francisco, CA 94104	SJSU Research Foundation	
Account Name:	San Jose State University Research Foundation	210 N. Fourth Street, 3rd Floor	
Bank Account #:	4692248859	San Jose, CA 95112	
ABA #:	121000248	Total Amount Due: \$2,075.00	
Swift #:	WFBIUS6S		

*Finance charges of .833% per month (.00833) will be added to unpaid balances 30 days from billing date.

Terms: Net 30 Days

Invoice: MLML D146

Date: 10/8/2022
Applied Marine Sciences
4749 Bennett Dr., Ste. L
Livermore, CA 94551
925-373-7142

Attention:
Paul Salop (salop@amarine.com)
Diane Stafford (stafford@amarine.com)

Project: CCLEAN and ACCWP RMC Data Management Services - 2022 Q3
MPSL-MLML Contact: Marco Sigala (marco.sigala@sjsu.edu)
SJSURF Account: 34-1509-0010 (OC 06100)

Task	# Units	Per Unit Cost	Total	Description
Quarterly Data Management Services	1	\$2,075.00	\$2,075.00	Data management tasks including vocabulary review, loading of bioassessment (physical habitat, benthic and algae taxonomy) and water quality (field, habitat, chemistry, toxicity) data, GIS watershed delineations and metric calculations, and bioassessment metric and index (IPI, CSCI, ASCI) calculations.
			Total	\$2,075.00



1420 S. Blaine Street, Suite 14
 Moscow, ID 83843

Applied Marine Sciences, Inc.; Livermore
 Diane Stafford
 4749 Bennett Drive
 Suite L
 Livermore, CA 94551

Invoice number 3662
 Date 10/11/2022

Project 7936 AMS Kinnetic (ADH) SWAMP Algae
 2018-2022

Direct Questions to: (208) 882-2588 or accounting@ecoanalysts.com

Description		Contract Amount	Prior Billed	Total Billed	Remaining	Current Billed
2022 Alameda ACCWP SWAMP Soft Algae	Units	22.00	0.00	22.00	0.00	22.00
Unit Price: \$1,400.00	Amount	30,800.00	0.00	30,800.00	0.00	30,800.00
2022 Alameda ACCWP Data Report Submittal	Units	1.00	0.00	1.00	0.00	1.00
Unit Price: \$175.00	Amount	175.00	0.00	175.00	0.00	175.00
2022 Alameda ACCWP Storage/Year	Units	264.00	0.00	264.00	0.00	264.00
Unit Price: \$1.75	Amount	462.00	0.00	462.00	0.00	462.00
	Units	287.00	0.00	287.00	0.00	287.00
Total	Amount	31,437.00	0.00	31,437.00	0.00	31,437.00
					Invoice total	31,437.00

Invoice Payment Terms: Net 30 days

PACIFIC ECORISK

Environmental Consulting and Testing
 2250 Cordelia Road, Fairfield, CA 94534
 Ph: (707) 207-7760 Fax: (707) 207-7916

INVOICE

Date	Invoice #
9/15/22	18460

Invoice to
Applied Marine Sciences Attn: Diane Stafford 4749 Bennett Dr., Suite L Livermore, CA 94551 stafford@amarine.com

Prepared for
Applied Marine Sciences Attn: Paul Salop 4749 Bennett Dr., Suite L Livermore, CA 94551 salop@amarine.com

PER PROJECT NO.	TERMS	PO/CONTRACT NO.
36647	Net 30	3060

Service	Qty	Unit	Unit Fee	Net Fee
Dry Weather Monitoring - Alameda County (ACCWP)				
Samples collected Jul 12, 2022				
ID: 204R01380-W-06				
ID: 204ADV010-W-06				
Ambient Water - Toxicity Testing - (100% concentration only)				
Chronic algal growth test with Selenastrum capricornutum	2	ea.	1,113.00	2,226.00
6-8 day chronic Ceriodaphnia dubia survival and reproduction test	2	ea.	1,113.00	2,226.00
7-day chronic fathead minnow survival and growth test	2	ea.	1,113.00	2,226.00
10-day Hyalella azteca (Water exposure)	2	ea.	828.00	1,656.00
96-hr Chironomus dilutus (Water exposure)	2	ea.	1,153.00	2,306.00
Subtotal				10,640.00
Reference Toxicant Testing				
Concurrent reference toxicant test with fathead minnows	0.25	ea.	1,765.00	441.25
Concurrent reference toxicant test with Hyalella azteca (one for water and one for sediment)	0.25	ea.	2,212.00	553.00
Concurrent reference toxicant test with Chironomus dilutus	0.25	ea.	977.00	244.25
Subtotal				1,238.50
Ambient Sediment - Toxicity Testing - (100% concentration only)				
10-day Hyalella azteca survival and growth test	2	ea.	1,540.00	3,080.00
10-day Chironomus dilutus survival and growth test	2	ea.	1,621.00	3,242.00
Subtotal				6,322.00
Total				\$18,200.50



9057C Soquel Drive, Suite B
 Aptos, California 95003
 Ofc. (831) 457-3950

Invoice No. 13072

Invoice Date: 10/24/22
Billing Cycle: 09/01/22 - 09/30/22

Project 430 - ACCWP

Bill To:

Applied Marine Sciences
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 Attn: Diane Stafford, Paul Salop

Contract No.: 2022-0001
Task Order No.: 430-002

Remit Payment To:

Kinnetic Environmental, Inc.
 9057C Soquel Drive, Ste B
 Aptos, CA 95003

KEI Project No.: 5880.00

ACCWP - Bioassessment and Continuous Monitoring

Employee / Item	Title/Description	Hours / Qty	Rate	Amount
Task 2 - Continuous Monitoring				
Kevin Lewis	Project Scientist I	10.25	122.74	1,258.09
	Travel Expenses			113.75
Total Task 2 - Continuous Monitoring				1,371.84
			Subtask 7 - CSM	
Task 3 - As-requested Technical Support				
Christian Kocher	Project Manager	2.50	179.56	448.90
Total Task 3 - As-requested Technical Support				448.90
			Subtask 10 - LID	

BALANCE DUE \$ 1,820.74

Total Amount Authorized	45,000.00
Total Billed as of Last Period	31,220.09
Billed this Period	1,820.74
Total Billed to Date	33,040.83
Total Budget Remaining	11,959.18
Percent Complete	73%

Date	Employee	Project	Hours
Task 1 - Continuous Monitoring			
09/06/2022	Lewis, Kevin	5880.02 - Continuous Monitoring	0.25
09/16/2022	Lewis, Kevin	5880.02 - Continuous Monitoring	1.00
09/19/2022	Lewis, Kevin	5880.02 - Continuous Monitoring	0.25
09/20/2022	Lewis, Kevin	5880.02 - Continuous Monitoring	8.00
09/21/2022	Lewis, Kevin	5880.02 - Continuous Monitoring	0.75
Lewis, Kevin Total			10.25
Task 3 - As-requested Technical Support			
09/16/2022	Kocher, Christian	5880.03 - As-requested Technical Support	1.00
09/19/2022	Kocher, Christian	5880.03 - As-requested Technical Support	0.50
09/20/2022	Kocher, Christian	5880.03 - As-requested Technical Support	1.00
Kocher, Christian Total			2.50

Non-Labor Expense Summary

Invoice No. **13072**

Invoice Date 10/24/22

<u>Date</u>	<u>Vendor</u>	<u>Description</u>	<u>Payee</u>	<u>Qty.</u>	<u>Rate</u>	<u>Amount</u>
Task 2 - Continuous Monitoring						
Travel Expenses - Mileage						
09/01-09/30	Mileage		Kevin Lewis	182	0.625	<u>113.75</u>
Total Travel Expenses - Mileage						113.75
Total Task 2 - Continuous Monitoring						113.75
TOTAL NON-LABOR EXPENSE						\$ 113.75

December 20, 2022

Invoice No. 430-21/24

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: November 1-30, 2022

For Approval by Sharon Gosselin

Program No.	Task Numbers	Work Order	Activity Code		Current Invoice	Budgeted	Cumulative	Remaining
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$53,592.07	\$6,407.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$7,260.00	\$22,501.00	\$21,435.00	\$1,066.00
50201	Task 7 - C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$26,887.50	\$330,000.00	\$172,181.83	\$157,818.17
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$5,403.91	\$107,000.00	\$28,499.36	\$78,500.64
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$3,676.64	\$42,000.00	\$7,116.64	\$34,883.36
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$7,717.58	\$54,000.00	\$21,492.97	\$32,507.03
50201	Task 11 - Task CW17-22-23	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$4,607.90	\$48,081.00	\$4,607.90	\$43,473.10
Total:					\$55,553.53	\$1,154,632.00	\$797,963.16	\$356,668.84

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

okay to pay G33

sg

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/24

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 11/1/22-11/30/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

		Subtask 1					Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	35.5	\$7,632.50				\$32,032.50
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						\$1,402.50
Staff Scientist-TV	\$120.00	47.25	\$5,670.00				\$7,560.00
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
Subcontractors							
Kinnetic Environmental							\$32,591.93
Bioassessment Services			\$12,350.00				\$16,601.89
San Jose State University							\$2,037.50
Benjamin Salop							\$360.00
Ecoanalysts							\$31,437.00
Caltest							\$17,488.30
Pacific Ecorisk							\$18,200.50
Direct Expenses							\$520.00
G&A 10% (Subs only)							\$11,871.71
G&A 15% (ODC's only)							\$78.00
Total Invoiced			\$26,887.50				\$172,181.83
TOTALS:							
Authorized Budget			\$330,000.00				\$330,000.00
Prior Invoiced Amount			\$145,294.33				\$145,294.33
Current Invoice			\$26,887.50				\$26,887.50
Budget Remaining			\$157,818.17				\$157,818.17

Task 7 Amount Due:	\$26,887.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/24

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 11/1/22-11/30/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	16.5	\$3,547.50	\$20,532.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00	11.25	\$1,350.00	\$3,720.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00	2	\$220.00	\$220.00
Administrative-DC	\$125.00			
Subcontractors				
San Jose State University				
Kinnetic Environmental				
Pacific Ecorisk				
Direct Expenses			\$249.05	\$782.04
G&A 10% (Subs only)				
G&A 15% (ODC's only)			\$37.36	\$117.32
Total Invoiced			\$5,403.91	\$28,499.36
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$23,095.45	\$23,095.45
Current Invoice			\$5,403.91	\$5,403.91
Budget Remaining			\$78,500.64	\$78,500.64

Task 8 Amount Due:	\$5,403.91
---------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/24

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 11/1/22-11/30/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	15	\$3,225.00	\$6,665.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00	3.5	\$420.00	\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH)				
Bioassessment Services				
Direct Expenses			\$27.51	\$27.51
G&A 10% (Subs only)				
G&A 15% (ODC's only)			\$4.13	\$4.13
Total Invoiced			\$3,676.64	\$7,116.64
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount			\$3,440.00	\$3,440.00
Current Invoice			\$3,225.00	\$3,225.00
Budget Remaining			\$35,335.00	\$35,335.00

Task 9 Amount Due:	\$3,676.64
---------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/24

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 11/1/22-11/30/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	28	\$6,020.00	\$18,812.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental Bioassessment Services			\$1,526.26	\$1,975.16
Direct Expenses				
			\$16.25	\$39.38
G&A 10% (Subs only)				\$197.52
G&A 15% (ODC's only)				\$5.91
Total Invoiced			\$7,717.58	\$21,492.97
TOTALS:				
Authorized Budget			\$54,000.00	\$54,000.00
Prior Invoiced Amount			\$13,775.39	\$13,775.39
Current Invoice			\$7,717.58	\$7,717.58
Budget Remaining			\$32,507.03	\$32,507.03

Task 10 Amount Due:	\$7,717.58
----------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/24

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 11/1/22-11/30/22

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Adminstrative-DS	\$110.00				
Adminstrative-DC	\$125.00				
<u>Subcontractors</u>					
EOA, Inc.			\$4,189.00		\$4,189.00
<u>Direct Expenses</u>					
G&A 10% (Subs only)			\$418.90		\$418.90
G&A 15% (ODC's only)					
Total Invoiced			\$4,607.90		\$4,607.90
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount					
Current Invoice			\$4,607.90		\$4,607.90
Budget Remaining			\$43,473.10		\$43,473.10

Task 11 Amount Due:	\$4,607.90
----------------------------	-------------------



Name: Theresa Venello	Report Dates:	Report Amounts:
Description: 430-8 Ice for stormwater samples	Begin Date 11/7/2022	Advance Amount 0.00
Notes: 60 lbs of ice for sample storage.	End Date 11/7/2022	Total Amount 26.42

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
11/7/2022	430	ACCWP	FY23 POCs	Lab Supply		0.00	0.0000	26.42			£	£
								Total:	26.42			
								Advance:	0.00			
								Credit Card:	0.00			
								Personal:	0.00			
								Net Due:	26.42			

 Employee Signature

 Date

 Manager Signature

 Date

Approval:	Name	Approved
Supervisor:	Paul Salop	11/18/22
Accounting:	Dovlynn Cammack	11/18/22

Name: Theresa Venello
Notes

Date	ID	Project Description	Phase	Expense Item	Payee	Credit Card	Personal
11/7/2022	430	ACCWP	FY23 POCs	Lab Supply			£
Employee Notes: 60 lb of ice for samples							

SAFEWAY

Store 1257 Dir Denise Medina
Main:(925) 455-2520 Rx:(925) 455-2522
4495 First Street
LIVERMORE CA 94550

REFRIG/FROZEN

4 QTY ARTIC GLAC 23.96 B

TAX 2.46

**** BALANCE 26.42

Debit Purchase 11/07/22 13:16
CARD # *****5305 PRIMARY
TOTAL TRANSACTION AMOUNT: 26.42
CASH BACK AMOUNT: 0.00
REF: 381639153050 AUTH: 00625921

AL US DEBIT
AID A0000000980840
TVR 8000048000
TSI 6800

Debit 26.42

CHANGE 0.00

TOTAL NUMBER OF ITEMS SOLD = 4
11/07/22 13:16 1257 93 148 8893

Join the Safeway Club today.
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YOUR CASHIER TODAY WAS SELF



00125709301482211071316

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877-276-9637 or Safeway.com/foru

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4904 S.Front Rd.
Livermore CA 94551

DBA SOUTH FRONT GAS
SOUTHFRONT RD
LIVERMORE CA 94551
09480831

11/08/22 7:05:35 PM
Register: 1 Trans #: 6334 Op ID: 1
Your cashier: S

*** PREPAID RECEIPT ***

REGULAR CR	PUMP# 6	\$40.00	NT

	Subtotal =	\$40.00	
	Tax =	\$0.00	

	Total =	\$40.00	
	Change Due =	\$0.00	
Credit		\$40.00	

XXXX XXXXXX X2027 AMEX
INVOICE: 190623
AUTH 00--807680
AMERICAN EXPRESS
AID: A000000025010801
ARQC: AA128ABF24811A9B

REMIT TO:
 U-Haul
 PO BOX 52128
 Phoenix AZ 85072-2128
 PH:800-345-5876, Option 2
 HOURS: MON-FRI 8AM - 4PM MST
 e-mail:Credit_Administration@uhaul.com



INVOICE

INVOICE # 5402338721
INVOICE DATE 10-NOV-22
PURCHASE ORDER
SALES ORDER 815048 26203108
CORPORATE ACCT # 99224471

BILL TO:
 ATTN:DOVLYNN CAMMACK
 APPLIED MARINE SCIENCES, INC
 4749 BENNETT DRIVE STE L
 STE L
 LIVERMORE, CA, 94551

Please include Corporate Acct # and invoice numbers with your payment. Your business is appreciated.

TERMS	DUE DATE	SALES MANAGER	DATE OUT	DATE IN	DAYS ALLOWED	MILES ALLOWED
NET 30	10-DEC-22	RYAN MOORE		08-NOV-22		
Line#	LOCAL RENTAL	QTY	UNIT PRICE	AMOUNT		
1	CARGO VAN (BE2893F) ODOM OUT: 4994 ODOM IN: 5144	1	19.95	\$ 19.95		
2	MILEAGE CHARGE ODOM OUT: 4994 ODOM IN: 5144	1	118.50	\$ 118.50		
3	ENVIRONMENTAL FEE	1	1.00	\$ 1.00		
4	TAX	1	14.30	\$ 14.30		
Location:LIVERMORE, CA Name: PAUL SALOP					TOTAL: \$ 153.75	



Name: Theresa Venello	Report Dates:	Report Amounts:
Description: 430 ACCWP trash site visit	Begin Date 11/10/2022	Advance Amount 0.00
Notes: mileage from office for travel to sites for trash monitoring	End Date 11/10/2022	Total Amount 10.63

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
11/10/2022	430	ACCWP	FY23 Trash	Mileage		17.00	0.6250	10.63			£	£
Total:								10.63				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								10.63				

Employee Signature

Date

Manager Signature

Date

Approval:	Name	Approved
Supervisor:	Paul Salop	11/18/22
Accounting:	Dovlynn Cammack	11/18/22



Name: Paul Salop	Report Dates:	Report Amounts:
Description: 430-9 site recon	Begin Date: 11/16/2022	Advance Amount: 0.00
Notes: Potential trash outfall monitoring site recon	End Date: 11/16/2022	Total Amount: 7.50

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
11/16/2022	430	ACCWP	FY23 Trash	Mileage	Paul Salop	12.00	0.6250	7.50			£	£
Total:								7.50				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								7.50				

Employee Signature

Date

Manager Signature

Date

Approval:	Name	Approved
Supervisor:	Dovlynn Cammack	11/18/22
Accounting:	Dovlynn Cammack	11/18/22

Formula Design
888-231-0694

1038 Ash Avenue
Cottage Grove, Oregon
97424
United States



Billed To
Paul Salop
Clean Water Program
4749 Bennett Dr., Ste. L
Livermore, California
94551
United States

Date of Issue
12/15/2022

Due Date
12/31/2022

Invoice Number
0000350

Amount Due (USD)
\$600.00

Description	Rate	Qty	Line Total
Hosting Hosting for January 1, 2023 to December 31, 2023. This should be paid by the 1st of January.	\$50.00	12	\$600.00
Subtotal			600.00
Tax			0.00
Total			600.00
Amount Paid			0.00
Amount Due (USD)			\$600.00

Notes

This invoice is for hosting in 2021.

Terms

Please, pay invoice in net 30 days to avoid a 10% late fee.

430-6

Formula Design
888-231-0694

1038 Ash Avenue
Cottage Grove, Oregon
97424
United States



Billed To
Paul Salop
Clean Water Program
4749 Bennett Dr., Ste. L
Livermore, California
94551
United States

Date of Issue
12/16/2022

Due Date
12/31/2022

Invoice Number
0000351

Amount Due (USD)
\$6,000.00

Description	Rate	Qty	Line Total
Web Design and Development 3rd Payment: Due upon Clean Water Program WordPress CMS content move.	\$6,000.00	1	\$6,000.00
Subtotal			6,000.00
Tax			0.00
Total			6,000.00
Amount Paid			0.00
Amount Due (USD)			\$6,000.00

Notes

This invoice is for the 3rd payment due upon content move. The next step is to go live. This is not the final payment.

Terms

Please, pay invoice in net 30 days to avoid a 10% late fee.



Joseph T. King, dba BioAssessment Services
 PO Box 0752
 Folsom, CA 95763-0752
 (916) 838-3846
 jtkbioassess@gmail.com

430-7

August 5, 2022

INVOICE

No. 00537
 Project: ACCWP
 PO Number: 3361
 Accounting Code: 430-7

Diane Stafford
 Applied Marine Sciences
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Re: Costs associated with laboratory processing of benthic samples for the Alameda Countywide Clean Water Program (ACCWP)

In June and July of 2022, 22 benthic samples were processed for the macroinvertebrate bioassessment component of the ACCWP. Tasks included subsampling a minimum of 600 organisms when possible, identification of subsampled organisms to a standard taxonomic level, and archiving organisms in a voucher collection. Work completed to date represents approximately 88% of total anticipated for project.

Benthic sample processing (22 samples @ \$525 per sample).....\$ 11,550.00
Data management/coordination (10 hours @ \$80.00 per hour).....\$ 800.00

TOTAL DUE THIS INVOICE.....\$ 12,350.00

Make check payable to: Joseph T. King

Remit payment to: BioAssessment Services
 PO Box 0752
 Folsom, CA 95763-0752

430-10

KINNETIC ENVIRONMENTAL

Invoice No. 13122

9057C Soquel Drive, Suite B
Aptos, California 95003
Ofc. (831) 457-3950

Invoice Date: 11/28/22
Billing Cycle: 10/01/22 - 10/31/22

Bill To:

Applied Marine Sciences
4749 Bennett Drive, Suite L
Livermore, CA 94551
Attn: Diane Stafford, Paul Salop

Contract No.: 2022-0001
Task Order No.: 430-003

Remit Payment To:

Kinnetic Environmental, Inc.
9057C Soquel Drive, Ste B
Aptos, CA 95003

KEI Project No.: 5880.00

ACCWP - Low Impact Development Monitoring Planning and Preparation

Employee / Item	Title/Description	Hours / Qty	Rate	Amount
Task 1 - Support LID Monitoring Planning				
Christian Kocher	Project Manager	8.50	179.56	1,526.26
Total Task 1 - Support LID Monitoring Planning				1,526.26
BALANCE DUE				\$ 1,526.26

Total Amount Authorized	15,000.00
Total Billed as of Last Period	-
Billed this Period	1,526.26
Total Billed to Date	1,526.26
Total Budget Remaining	13,473.74
Percent Complete	10%

Date	Employee	Task	Hours
Task 1 - Support LID Monitoring Planning			
10/20/22	Kocher, Christian	5880.04 Support LID Monitoring Planning	1.00
10/21/22	Kocher, Christian	5880.04 Support LID Monitoring Planning	7.50
	Kocher, Christian Total		8.50



EOA, Inc.

1410 Jackson St.
Oakland, CA 946124010
Tel: (510) 832-2852
www.eoainc.com

430-11

Invoice

Mr Paul Salop
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551

Invoice Date: Oct 5, 2022
Invoice Num: AMS001-0822
Billing From: Aug 01, 2022
Billing To: Aug 31, 2022

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.25	\$291.00	\$363.75
Total Services:			\$363.75

Amount Due This Invoice: **\$363.75**

This invoice is due upon receipt

EOA, Inc.
Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 0.00	\$ 363.75	\$ 363.75	\$ 43,346.25



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

430-11

Invoice

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Invoice Date: Nov 29, 2022
Invoice Num: AMS001-1022
Billing From: Sep 01, 2022
Billing To: Oct 31, 2022

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.00	\$291.00	\$291.00
Senior Engineer/Scientist III	9.00	\$242.00	\$2,178.00
Associate Engineer/Scientist III	4.25	\$183.00	\$777.75
Technician	1.00	\$121.00	\$121.00
Total Services:			\$3,367.75

Draft BMP Report (AMS001:02) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Associate Engineer/Scientist III	2.50	\$183.00	\$457.50
Total Services:			\$457.50

Amount Due This Invoice: \$3,825.25

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 363.75	\$ 3,825.25	\$ 4,189.00	\$ 39,521.00

January 18, 2023

Invoice No. 430-21/25

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: December 1-31, 2022

For Approval by Sharon Gosselin

Program No.	Task Numbers	Work Order	Activity Code		Current Invoice	Budgeted	Cumulative	Remaining
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$1,720.00	\$60,000.00	\$55,312.07	\$4,687.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support	\$107.50	\$22,501.00	\$21,542.50	\$958.50
50201	Task 7- C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$5,698.75	\$330,000.00	\$177,880.58	\$152,119.42
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$29,724.18	\$107,000.00	\$58,223.54	\$48,776.46
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$1,612.50	\$42,000.00	\$8,729.14	\$33,270.86
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$8,442.14	\$54,000.00	\$29,935.11	\$24,064.89
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$8,809.35	\$48,081.00	\$13,417.25	\$34,663.75
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$0	\$66,671.00	\$0	\$66,671.00
Total:					\$56,114.42	\$1,221,303.00	\$854,077.58	\$367,225.42

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

okay to pay G33

Sg



Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 4 - Arroyo Las Positas SSID Study

Task C8E-21-1

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	8	\$1,720.00	\$21,565.00
Principal Scientist-MB	\$165.00			\$1,732.50
Principal Scientist-AM	\$186.00			\$1,200.00
Staff Scientist-ES	\$110.00			\$330.00
Staff Scientist-EG	\$110.00			\$11,550.00
Staff Scientist-CH	\$115.00			\$6,135.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			\$375.00
Subcontractors				
Caltest				\$92.00
University of Hawaii				\$675.00
SLAB SOEST Laboratory				\$1,493.00
San Francisco Estuary Institute				\$396.20
Direct Expenses				\$8,263.26
G&A 10% (Subs only)				\$265.62
G&A 15% (ODC's only)				\$1,239.49
Total Invoiced			\$1,720.00	\$55,312.07
TOTALS:				
Authorized Budget			\$60,000.00	\$60,000.00
Prior Invoiced Amount			\$53,592.07	\$57,612.07
Current Invoice			\$1,720.00	\$1,720.00
Budget Remaining			\$4,687.93	\$667.93

Task 4 Amount Due:	\$1,720.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 6 - Website Support

Task PRC-22-1

Labor	Rate	<u>Subtask 1</u>						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	0.5	\$107.50					\$422.50
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$186.00							
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00							
Administrative-DS	\$110.00							
Administrative-DC	\$125.00							
<u>Subcontractors</u>								
Formula Design								\$19,200.00
<u>Direct Expenses</u>								
G&A 10% (Subs only)								\$1,920.00
G&A 15% (ODC's only)								
Total Invoiced			\$107.50					\$21,542.50
TOTALS:								
Authorized Budget			\$22,501.00					\$22,501.00
Prior Invoiced Amount			\$21,435.00					\$21,435.00
Current Invoice			\$107.50					\$107.50
Budget Remaining			\$958.50					\$958.50

Task 6 Amount Due:	\$107.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

Labor	Rate	Subtask 1						Task Total
		Hours	Charges					
Principal Scientist-JJ	\$231.75							
Program Manager-PS	\$215.00	12.5	\$2,687.50					\$34,720.00
Principal Scientist-MB	\$165.00							
Principal Scientist-AM	\$185.00							
Staff Scientist-ES	\$110.00							
Staff Scientist-EG	\$110.00							\$1,402.50
Staff Scientist-TV	\$120.00							\$7,560.00
Adminstrative-DS	\$110.00							
Adminstrative-DC	\$125.00							
<u>Subcontractors</u>								
Kinnetic Environmental								\$32,591.93
Bioassessment Services			\$1,700.00					\$18,301.89
San Jose State University			\$1,037.50					\$3,075.00
Benjamin Salop								\$360.00
Ecoanalysts								\$31,437.00
Caltest								\$17,488.30
Pacific Ecorisk								\$18,200.50
<u>Direct Expenses</u>								
								\$520.00
G&A 10% (Subs only)			\$273.75					\$12,145.46
G&A 15% (ODC's only)								\$78.00
Total Invoiced			\$5,698.75					\$177,880.58
TOTALS:								
Authorized Budget			\$330,000.00					\$330,000.00
Prior Invoiced Amount			\$172,181.83					\$172,181.83
Current Invoice			\$5,698.75					\$5,698.75
Budget Remaining			\$152,119.42					\$152,119.42

Task 7 Amount Due:	\$5,698.75
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	1	\$215.00	\$20,747.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00			\$3,720.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			\$220.00
Administrative-DC	\$125.00			
Subcontractors				
ALS			\$5,425.00	\$5,425.00
Kinnetic Environmental			\$2,851.53	\$2,851.53
Pacific Ecorisk			\$18,550.00	\$18,550.00
Direct Expenses				
				\$782.04
G&A 10% (Subs only)			\$2,682.65	\$2,682.65
G&A 15% (ODC's only)				\$117.32
Total Invoiced			\$29,724.18	\$58,223.54
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$28,499.36	\$28,499.36
Current Invoice			\$29,724.18	\$29,724.18
Budget Remaining			\$48,776.46	\$48,776.46

Task 8 Amount Due:	\$29,724.18
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	<u>Subtask 1</u>			<u>Task Total</u>
<u>Labor</u>	<u>Rate</u>	<u>Hours</u>	<u>Charges</u>	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	7.5	\$1,612.50	\$8,277.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
<u>Subcontractors</u>				
Kinnetic Environmental (ADH)				
Bioassessment Services				
<u>Direct Expenses</u>				
G&A 10% (Subs only)				
G&A 15% (ODC's only)				
Total Invoiced			\$1,612.50	\$8,729.14
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount			\$7,116.64	\$7,116.64
Current Invoice			\$1,612.50	\$1,612.50
Budget Remaining			\$33,270.86	\$33,270.86

Task 9 Amount Due:	\$1,612.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	35.5	\$7,632.50	\$26,445.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental Bioassessment Services			\$729.50	\$2,704.66
Direct Expenses				
			\$6.25	\$45.63
G&A 10% (Subs only)			\$72.95	\$270.47
G&A 15% (ODC's only)			\$0.94	\$6.85
Total Invoiced			\$8,442.14	\$29,935.11
TOTALS:				
Authorized Budget			\$54,000.00	\$54,000.00
Prior Invoiced Amount			\$21,492.97	\$21,492.97
Current Invoice			\$8,442.14	\$8,442.14
Budget Remaining			\$24,064.89	\$24,064.89

Task 10 Amount Due:	\$8,442.14
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/25

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 12/1/22-12/31/22

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

Labor	Rate	Subtask 1				Task Total
		Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00					
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Staff Scientist-CH	\$115.00					
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
EOA, Inc.			\$8,008.50			\$12,197.50
Direct Expenses						
G&A 10% (Subs only)			\$800.85			\$1,219.75
G&A 15% (ODC's only)						
Total Invoiced			\$8,809.35			\$13,417.25
TOTALS:						
Authorized Budget			\$48,081.00			\$48,081.00
Prior Invoiced Amount			\$4,607.90			\$4,607.90
Current Invoice			\$8,809.35			\$8,809.35
Budget Remaining			\$34,663.75			\$34,663.75

Task 11 Amount Due:	\$8,809.35
----------------------------	-------------------

430-8

PACIFIC ECORISK

Environmental Consulting and Testing
 2250 Cordelia Road, Fairfield, CA 94534
 Ph: (707) 207-7760 Fax: (707) 207-7916

INVOICE

Date	Invoice #
12/31/22	18697

Invoice to
Applied Marine Sciences Attn: Diane Stafford 4749 Bennett Dr., Suite L Livermore, CA 94551 stafford@amarine.com

Prepared for
Applied Marine Sciences Attn: Paul Salop 4749 Bennett Dr., Suite L Livermore, CA 94551 salop@amarine.com

PER PROJECT NO.	TERMS	PO/CONTRACT NO.
37033	Net 30	3060

Service	Qty	Unit	Unit Fee	Net Fee
Dry Weather Monitoring - Alameda County (ACCWP)				
Samples collected Nov 8, 2022				
ID: Z4LA				
ID: 204ACA200				
ID: SANLORCRCUP				
Ambient Water - Toxicity Testing - (100% concentration only)				
Chronic algal growth test with Selenastrum capricornutum	3	ea.	1,202.00	3,606.00
6-8 day chronic Ceriodaphnia dubia survival and reproduction test	3	ca.	1,202.00	3,606.00
7-day chronic fathead minnow survival and growth test	3	ea.	1,202.00	3,606.00
10-day Hyalella azteca (Water exposure)	3	ea.	894.00	2,682.00
96-hr Chironomus dilutus (Water exposure)	3	ea.	1,245.00	3,735.00
Subtotal				17,235.00
Reference Toxicant Testing				
Concurrent reference toxicant test with fathead minnows	0.25	ea.	1,906.00	476.50
Concurrent reference toxicant test with Hyalella azteca	0.25	ea.	2,236.00	559.00
Concurrent reference toxicant test with Chironomus dilutus	0.25	ea.	1,118.00	279.50
Subtotal				1,315.00
Total				\$18,550.00



right solutions.
right partner.

430-8

Remit To: ALS Group U.S.A. Corp.
PO Box 975444
Dallas, TX 75397-5444
Attn: Accounts Receivable
TEL: +1 281 530 5656
FAX: +1 281 561 6125
T.L.N.: 76-0606679

INVOICE

Service Request: K2211209
Customer No.: 207712-01

Invoice No.: 36-51-603406-0
Invoice Date: 1/11/23

Project Name: Accup POCX
Project Number:

Attn: Paul Salop
Applied Marine Sciences, Incorporated
salop@amarine.com
4749 Bennett Dr. Suite L
Livermore, CA 94551

Report To: Paul Salop
Applied Marine Sciences, Incorporated
4749 Bennett Dr. Suite L
Livermore, CA 94551

ALS Project Manager: Kelley Lovejoy (Kelley.Lovejoy@alsglobal.com)
Phone: +1 360 577 7222
ALS Sales Rep: Howard Boorse

Samples submitted on: 9/27/22

Analytical Services

Sediment

Method	Test Description	QTY	Unit Price	TAT Surcharge	Adj Unit Price	Extended Price	
160.3 Modified	Total Solids, Modified for Solids [Residue, Total (Gravimetric, Dried at 103-105 Deg C)]	20	\$10.00	0%	\$10.00	\$200.00	K
7471B	Mercury in Solid or Semisolid Waste (Manual CVAA)	10	\$40.00	0%	\$40.00	\$400.00	K
8082A	Polychlorinated Biphenyl (PCB) Congeners by GC/ECD	10	\$280.00	0%	\$280.00	\$2,800.00	K
Archive	Archive at 4 Degrees Celcius	10	\$10.00	0%	\$10.00	\$100.00	K
ASTM D4129-82M	Total Organic Carbon by High Temperature Oxidation and by Coulometric Detection Modified for Matrix	10	\$65.00	0%	\$65.00	\$650.00	K
ASTM D422M	Particle-Size Analysis of Soils, Condensed Breakout	10	\$75.00	0%	\$75.00	\$750.00	K
ASTM E1109-86	Bulk Density	10	\$15.00	0%	\$15.00	\$150.00	K
Sieve	Sieve	10	\$35.00	0%	\$35.00	\$350.00	K

Other Services and Supplies

Description	QTY	Unit Price	Unit Percent	Tax Rate	Extended Price	
Sustainability Fee - Cost per work order SDG CoC	1.00	\$25.00	0.00		\$25.00	K

Subtotals

Analytical Services:	\$5,400.00
Other Charges:	\$25.00
Applicable Tax:	\$0.00
Amount Due (USD):	\$5,425.00

Penalty of \$150, plus 1.5% interest per month (18% per year) charge on past due accounts. Clients are also responsible for any collection costs.

Subject to ALS Terms & Conditions

Right Solutions • Right Partner

www.alsglobal.com

Printed 1/11/23 16:33

Page 1 of 2

S6.2.101

\$1037.50 - 199 - 3
 \$1037.50 - 430 - 7

SJSU | RESEARCH FOUNDATION

210 N. Fourth Street, 3rd Floor, San Jose, CA 95112
<http://www.sjsu.edu/researchfoundation>

INVOICE

Bill to: Applied Marine Sciences Attn: Paul Salop <salop@amarine.com> 4749 Bennett Dr., Ste. L Livermore, CA 94551		Invoice #: AR024068 Invoice Date: 1/4/2023 Customer ID: C0001138 SJSURF A/C #: 34-1509-0010 Object Code: 06100		
QT	Description	Rate \$	Acct #	Amount in US \$
1.0	Quarterly Data Management Services	\$ 2,075.00		\$ 2,075.00
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
	CCLEAN and ACCWP RMC Data Management Services - 2022 Q4			
	P.I. Marco Sigala			
1.0	T/Hrs	TOTAL AMOUNT DUE		\$ 2,075.00

Prepared by: Michael Lok, AR Accountant

DocuSigned by:

Hoang Tran

1/6/2023

Approved by:

Hoang Tran
 Controller, 408-924-1420
 Hoang Tran@sjsu.edu

Date

<u>TO PAY BY WIRE TRANSFER OR ACH</u>		<u>TO PAY BY CHECK</u>	
Bank Name:	Wells Fargo	Make Checks Payable & Mail to:	
Bank Address:	420 Montgomery St., San Francisco, CA 94104	SJSU Research Foundation	
Account Name:	San Jose State University Research Foundation	210 N. Fourth Street, 3rd Floor	
Bank Account #:	4692248859	San Jose, CA 95112	
ABA #:	121000248	Total Amount Due: \$2,075.00	
Swift #:	WFBUS6S		

*Finance charges of .833% per month (.00833) will be added to unpaid balances 30 days from billing date.

Terms: Net 30 Days

Invoice: MLML D162
Date: 1/3/2023
Applied Marine Sciences
4749 Bennett Dr., Ste. L
Livermore, CA 94551
925-373-7142

Attention:
Paul Salop (salop@amarine.com)
Diane Stafford (stafford@amarine.com)

Project: CCLEAN and ACCWP RMC Data Management Services - 2022 Q4
MPSL-MLML Contact: Marco Sigala (marco.sigala@sjsu.edu)
SJSURF Account: 34-1509-0010 (OC 06100)

Task	# Units	Per Unit Cost	Total	Description
Quarterly Data Management Services	1	\$2,075.00	\$2,075.00	Data management tasks including vocabulary review, loading of bioassessment (physical habitat, benthic and algae taxonomy) and water quality (field, habitat, chemistry, toxicity) data, GIS watershed delineations and metric calculations, and bioassessment metric and index (IPI, CSCI, ASCI) calculations

Total \$2,075.00



Joseph T. King, dba BioAssessment Services
 PO Box 0752
 Folsom, CA 95763-0752
 (916) 838-3846
 jtkbioassess@gmail.com

430-7

October 3, 2022

INVOICE

No. 00542
 Project: ACCWP
 PO Number: 3361
 Accounting Code: 430-7

Diane Stafford
 Applied Marine Sciences
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Re: Costs associated with laboratory processing of benthic samples for the Alameda Countywide Clean Water Program (ACCWP)

BioAssessment Services completed data entry/reporting compilation and inter-laboratory quality control. Work to date represents 100% of total anticipated for project.

Data management/coordination (10 hours @ \$80.00 per hour)	\$	800.00
Inter-lab quality control (2 samples @ \$450 per sample)	\$	900.00

TOTAL DUE THIS INVOICE.....\$ 1,700.00

Make check payable to:	Joseph T. King
Remit payment to:	BioAssessment Services PO Box 0752 Folsom, CA 95763-0752

430-11



EOA, Inc.
1410 Jackson St.
Oakland, CA 946124010
Tel: (510) 832-2852
www.eoainc.com

Invoice

Mr Paul Salop
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551

Invoice Date: Jan 6, 2023
Invoice Num: AMS001-1122
Billing From: Nov 01, 2022
Billing To: Nov 30, 2022

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

Employee Title	Hours	Rate	Amount
Managing Eng./Sci. III	4.50	\$293.00	\$1,318.50
Senior Engineer/Scientist III	19.50	\$244.00	\$4,758.00
Associate Engineer/Scientist III	9.00	\$184.00	\$1,656.00
Total Services:			\$7,732.50

Draft BMP Report (AMS001:02) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

Employee Title	Hours	Rate	Amount
Associate Engineer/Scientist III	1.50	\$184.00	\$276.00
Total Services:			\$276.00

Amount Due This Invoice: \$8,008.50

This invoice is due upon receipt

EOA, Inc.
Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 4,189.00	\$ 8,008.50	\$ 12,197.50	\$ 31,512.50



9057C Soquel Drive, Suite B
Aptos, California 95003
Ofc. (831) 457-3950

Task 8

Invoice No. 13156

Invoice Date: 01/19/23

Bill To:

Applied Marine Sciences
4749 Bennett Drive, Suite L
Livermore, CA 94551
Attn: Diane Stafford, Paul Salop

Remit Payment To:

Kinnetic Environmental, Inc.
9057C Soquel Drive, Ste B
Aptos, CA 95003

KEI Project No.: 5880.06

POC Monitoring Action Plan

Employee / Item	Title/Description	Hours / Qty	Rate	Amount
Laboratory Services				
	Caltest Analytical Laboratory			2,851.53

BALANCE DUE **\$ 2,851.53**



Invoice

Invoice No: 703046

Lab Order:X110572
Project:BAMSC PESTICIDES
Sampled: PAUL SALOP

Invoice Date: 12/12/2022
Received: 11/09/2022
Invoice Terms **: Net 30
Purchase Auth/PO:

Invoice To: Cathy Dobbins
 Kinnetic Environmental
 3065 Porter St. #101
 Soquel, CA 95073

Report To: Kevin Lewis 831/477-2003
 Kinnetic Environmental
 3065 Porter Street #101
 Soquel, CA 95073

CC:

Description	TAT	Quantity	Unit Price	Total Cost
Electronic Deliverable for CEDEN	Standard	11	\$10.00	\$110.00
Pyrethroids and Fipronil, EPA 625.1	Standard	11	\$498.60	\$5,484.60
Imidacloprid by HPLC (3 sample minimum)	Standard	11	\$355.50	\$3,910.50
Total				\$9,505.10

Invoice Notes

Please reference the invoice number on your check and remit to:

Caltest Analytical Laboratory
 1885 North Kelly Road
 Napa, California 94558
 (707) 258-4000

CCCWP 5886.05 = \$1901.02
 AMS POC 5880.06 = \$2851.53
 EOASCVURPPP 5764.12 = \$2851.53
 EOA SMWPPP 5765.12 = \$1901.02

****Payment due NET days from Invoice Date or Prior to Release of results if COD
 Past Due Balances subject to a FINANCE CHARGE of 1.5% per month.**

***** Securely pay invoices online at CaltestLabs.com *****



9057C Soquel Drive, Suite B
Aptos, California 95003
Ofc. (831) 457-3950

Task 10

Invoice Date: 01/19/23
Billing Cycle: 11/01/22 - 11/30/22

Bill To:

Applied Marine Sciences
4749 Bennett Drive, Suite L
Livermore, CA 94551
Attn: Diane Stafford, Paul Salop

Contract No.: 2022-0001
Task Order No.: 430-003

Remit Payment To:

Kinnetic Environmental, Inc.
9057C Soquel Drive, Ste B
Aptos, CA 95003

KEI Project No.: 5880.00

ACCWP - Low Impact Development Monitoring Planning and Preparation

Employee / Item	Title/Description	Hours / Qty	Rate	Amount
Task 1 - Support LID Monitoring Planning				
Christian Kocher	Project Manager	0.75	179.56	134.67
Kevin Lewis	Project Scientist I	4.50	122.74	552.33
Travel Expenses				42.50
Total Task 1 - Support LID Monitoring Planning				729.50

BALANCE DUE **\$ 729.50**

Total Amount Authorized	15,000.00
Total Billed as of Last Period	1,526.26
Billed this Period	729.50
Total Billed to Date	2,255.76
Total Budget Remaining	12,744.24
Percent Complete	15%

Non-Labor Expense Summary

Invoice No. **13218**

Invoice Date 01/19/23

Date	Vendor	Description	Payee	Qty.	Rate	Amount
Task 1 - Support LID Monitoring Planning						
Travel Expenses - Mileage						
11/10/22	Kevin Lewis	Mileage		68	0.625	42.50
Total Travel Expenses - Mileage						42.50
Total Task 1 - Support LID Monitoring Planning						42.50
TOTAL NON-LABOR EXPENSE						\$ 42.50

Date	Employee	Project	Hours
Task 1 - Support LID Monitoring Planning			
11/09/22	Kocher, Christian	5880.04 Support LID Monitoring Planning	0.25
11/22/22	Kocher, Christian	5880.04 Support LID Monitoring Planning	0.50
Kocher, Christian Total			0.75
11/09/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	0.50
11/10/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	3.00
11/11/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	0.25
11/14/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	0.25
11/17/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	0.25
11/18/22	Lewis, Kevin	5880.04 Support LID Monitoring Planning	0.25
Lewis, Kevin Total			4.50



February 10, 2023

Invoice No. 430-21/26

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda Countywide Clean Water Program
399 Elmhurst Street
Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: January 1-31, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$1,485.00	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$958.50	\$22,501.00	\$22,501.00	\$0.00
50201	Task 7 - C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$16,802.50	\$330,000.00	\$194,683.08	\$135,316.92
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$5,638.53	\$107,000.00	\$63,862.07	\$43,137.93
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$2,150.00	\$42,000.00	\$10,879.14	\$31,120.86
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$2,150.00	\$54,000.00	\$32,085.11	\$21,914.89
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$7,087.58	\$48,081.00	\$20,504.83	\$27,576.18
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$0	\$66,671.00	\$0	\$66,671.00
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$1,846.50	\$6,000.00	\$1,846.50	\$4,153.50
Total:					\$38,118.61	\$1,227,303.00	\$892,196.19	\$335,106.81

Please remit payment to:
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551
(925) 373-7142

Okay to pay G33
2/17/2023
Sg

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 4 - Arroyo Las Positas SSID Study

Task C8E-21-1

	Subtask 1		Task Total
Labor	Rate	Hours	Charges
Principal Scientist-JJ	\$231.75		
Program Manager-PS	\$215.00		\$21,565.00
Principal Scientist-MB	\$165.00		\$1,732.50
Principal Scientist-AM	\$186.00		\$1,200.00
Staff Scientist-ES	\$110.00		\$330.00
Staff Scientist-EG	\$110.00	13.5	\$1,485.00
Staff Scientist-CH	\$115.00		\$6,135.00
Administrative-DS	\$110.00		
Administrative-DC	\$125.00		\$375.00
Subcontractors			
Caltest			\$92.00
University of Hawaii			\$675.00
SLAB SOEST Laboratory			\$1,493.00
San Francisco Estuary Institute			\$396.20
Direct Expenses			
			\$8,263.26
G&A 10% (Subs only)			
			\$265.62
G&A 15% (ODC's only)			
			\$1,239.49
Total Invoiced			\$1,485.00
TOTALS:			
Authorized Budget		\$60,000.00	\$60,000.00
Prior Invoiced Amount		\$55,312.07	\$55,312.07
Current Invoice		\$1,485.00	\$1,485.00
Budget Remaining		\$3,202.93	\$3,202.93

Task 4 Amount Due:	\$1,485.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 6 - Website Support

Task PRC-22-1

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00					\$422.50
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$186.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
Formula Design			\$871.36			\$20,071.36
Direct Expenses						
G&A 10% (Subs only)			\$87.14			\$2,007.14
G&A 15% (ODC's only)						
Total Invoiced			\$958.50			\$22,501.00
TOTALS:						
Authorized Budget			\$22,501.00			\$22,501.00
Prior Invoiced Amount			\$21,542.50			\$21,542.50
Current Invoice			\$958.50			\$958.50
Budget Remaining			\$0.00			\$0.00

Task 6 Amount Due:	\$958.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

		Subtask 1			Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00	69	\$14,835.00		\$49,555.00
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00	3.5	\$647.50		\$647.50
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				\$1,402.50
Staff Scientist-TV	\$120.00	11	\$1,320.00		\$8,880.00
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
Kinnetic Environmental					\$32,591.93
Bioassessment Services					\$18,301.89
San Jose State University					\$3,075.00
Benjamin Salop					\$360.00
Ecoanalysts					\$31,437.00
Caltest					\$17,488.30
Pacific Ecorisk					\$18,200.50
Direct Expenses					
					\$520.00
G&A 10% (Subs only)					
					\$12,145.46
G&A 15% (ODC's only)					
					\$78.00
Total Invoiced			\$16,802.50		\$194,683.08
TOTALS:					
Authorized Budget			\$330,000.00		\$330,000.00
Prior Invoiced Amount			\$177,880.58		\$177,880.58
Current Invoice			\$16,802.50		\$16,802.50
Budget Remaining			\$135,316.92		\$135,316.92

Task 7 Amount Due:	\$16,802.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	25.5	\$5,482.50	\$26,230.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00	1.25	\$150.00	\$3,870.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			\$220.00
Administrative-DC	\$125.00			
Subcontractors				
ALS				\$5,425.00
Kinnetic Environmental				\$2,851.53
Pacific Ecorisk				\$18,550.00
Direct Expenses				
			\$5.24	\$787.28
G&A 10% (Subs only)				
				\$2,682.65
G&A 15% (ODC's only)				
			\$0.79	\$118.11
Total Invoiced			\$5,638.53	\$63,862.07
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$58,223.54	\$58,223.54
Current Invoice			\$5,638.53	\$5,638.53
Budget Remaining			\$43,137.93	\$43,137.93

Task 8 Amount Due:	\$5,638.53
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	10	\$2,150.00	\$10,427.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH) Bioassessment Services				
Direct Expenses				\$27.51
G&A 10% (Subs only)				
G&A 15% (ODC's only)				\$4.13
Total Invoiced			\$2,150.00	\$10,879.14
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount			\$8,729.14	\$8,729.14
Current Invoice			\$2,150.00	\$2,150.00
Budget Remaining			\$31,120.86	\$31,120.86

Task 9 Amount Due:	\$2,150.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

			Subtask 1				Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	10	\$2,150.00				\$28,595.00
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						\$462.50
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						
Staff Scientist-CH	\$115.00						
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
Subcontractors							
Kinnetic Environmental Bioassessment Services							\$2,704.66
Direct Expenses							\$45.63
G&A 10% (Subs only)							\$270.47
G&A 15% (ODC's only)							\$6.85
Total Invoiced			\$2,150.00				\$32,085.11
TOTALS:							
Authorized Budget			\$54,000.00				\$54,000.00
Prior Invoiced Amount			\$29,935.11				\$29,935.11
Current Invoice			\$2,150.00				\$2,150.00
Budget Remaining			\$21,914.89				\$21,914.89

Task 10 Amount Due:	\$2,150.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$6,443.25		\$18,640.75
Direct Expenses					
G&A 10% (Subs only)			\$644.33		\$1,864.08
G&A 15% (ODC's only)					
Total Invoiced			\$7,087.58		\$20,504.83
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$13,417.25		\$13,417.25
Current Invoice			\$7,087.58		\$7,087.58
Budget Remaining			\$27,576.18		\$27,576.18

Task 11 Amount Due:	\$7,087.58
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/26

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 1/1/23-1/31/23

Task Website Support

Task 13 - PRC-23-1

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00					
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Staff Scientist-CH	\$115.00					
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
Formula Design			\$1,678.64			\$1,678.64
Direct Expenses						
G&A 10% (Subs only)			\$167.86			\$167.86
G&A 15% (ODC's only)						
Total Invoiced			\$1,846.50			\$1,846.50
TOTALS:						
Authorized Budget			\$6,000.00			\$6,000.00
Prior Invoiced Amount						
Current Invoice			\$1,846.50			\$1,846.50
Budget Remaining			\$4,153.50			\$4,153.50

Task 13 Amount Due:	\$1,846.50
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Expense Report

Applied Marine Sciences, Inc.



A P P L I E D
marine
S C I E N C E S

Friday, February 10, 2023

Page 1

Name: Paul Salop Description: 430-10 site recon Notes: storm event site visit	Report Dates: Begin Date 1/13/2023 End Date 1/13/2023	Report Amounts: Advance Amount 0.00 Total Amount 5.24
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Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Print
1/13/2023	430	ACCWP	FY23 POCs	Mileage		8.00	0.6550	5.24			E	E
								Total:	5.24			
								Advance:	0.00			
								Credit Card:	0.00			
								Personal:	0.00			
								Net Due:	5.24			

Employee Signature

Date

Manager Signature

Date

Approval:	Name	Approved
Supervisor:	Paul Salop	01/13/23
Accounting:	Dovlynn Cammack	01/19/23



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

Task 430-11

Invoice

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Invoice Date: Jan 27, 2023
Invoice Num: AMS00-1222
Billing From: Dec 01, 2022
Billing To: Dec 31, 2022

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	6.25	\$293.00	\$1,831.25
Senior Engineer/Scientist III	14.00	\$244.00	\$3,416.00
Associate Engineer/Scientist III	5.50	\$184.00	\$1,012.00
Total Services:			\$6,259.25

Draft BMP Report (AMS001:02) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Associate Engineer/Scientist III	1.00	\$184.00	\$184.00
Total Services:			\$184.00

Amount Due This Invoice: **\$6,443.25**

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 12,197.50	\$ 6,443.25	\$ 18,640.75	\$ 25,069.25

430-13

Formula Design
888-231-0694
1038 Ash Avenue
Cottage Grove, Oregon
97424
United States



Billed To
Paul Salop
Clean Water Program
4749 Bennett Dr., Ste. L
Livermore, California
94551
United States

Date of issue
02/06/2023

Due Date
02/21/2023

Invoice Number
0000358

Amount Due (USD)
\$2,550.00

Description	Rate	Qty	Line Total
Web Design and Development Final Payment for Scope of work per proposal for Clean Water Project website redevelopment.	\$1,600.00	1	\$1,600.00
Web Design and Development 1/12/2023 Added new Stormwater Resource Plan documents to the website and links.	\$100.00	1	\$100.00
Web Design and Development 1/18/2023 uploaded annual report (large file) and changed graphics on home page and added links.	\$100.00	2	\$200.00
Web Design and Development 1/18/2023 Set up MailPoet for mass emails from within the administration area.	\$100.00	1.5	\$150.00
Administration 2/3/2023 Training on how to use the new site.	\$100.00	2	\$200.00
Web Design and Development Purchased pro version of WP Event Manager (\$100 yearly), and set up recurring events for front and backend.	\$100.00	3	\$300.00

\$871.36- TASK 6
\$1678.64- TASK 13

Subtotal	2,550.00
Tax	0.00
Total	2,550.00
	S6.2.123

Amount Paid

0.00

Amount Due (USD)

\$2,550.00

Terms

Please, pay invoice in net 15 days to avoid a 10% late fee.



March 9, 2023

Invoice No. 430-21/27

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda Countywide Clean Water Program
399 Elmhurst Street
Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: February 1-28, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>	<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>	
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$0	\$22,501.00	\$22,501.00	\$0
50201	Task 7 - C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$9,430.00	\$330,000.00	\$204,113.08	\$125,886.92
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$3,020.88	\$107,000.00	\$66,882.95	\$40,117.05
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$5,818.56	\$42,000.00	\$16,697.70	\$25,302.30
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$3,443.90	\$54,000.00	\$35,529.01	\$18,470.99
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$3,405.05	\$48,081.00	\$23,909.88	\$24,171.12
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$0	\$66,671.00	\$0	\$66,671.00
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$107.50	\$6,000.00	\$1,954.00	\$4,046.00
Total:					\$25,225.89	\$1,227,303.00	\$917,422.08	\$309,880.92

Please remit payment to:
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551
(925) 373-7142

Okay to pay G33

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

		Subtask 1					Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	34	\$7,310.00				\$56,865.00
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						\$647.50
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00	4	\$440.00				\$1,842.50
Staff Scientist-TV	\$120.00	14	\$1,680.00				\$10,560.00
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
Subcontractors							
Kinnetic Environmental							\$32,591.93
Bioassessment Services							\$18,301.89
San Jose State University							\$3,075.00
Benjamin Salop							\$360.00
Ecoanalysts							\$31,437.00
Caltest							\$17,488.30
Pacific Ecorisk							\$18,200.50
Direct Expenses							\$520.00
G&A 10% (Subs only)							\$12,145.46
G&A 15% (ODC's only)							\$78.00
Total Invoiced			\$9,430.00				\$204,113.08
TOTALS:							
Authorized Budget			\$330,000.00				\$330,000.00
Prior Invoiced Amount			\$194,683.08				\$194,683.08
Current Invoice			\$9,430.00				\$9,430.00
Budget Remaining			\$125,886.92				\$125,886.92

Task 7 Amount Due:	\$9,430.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	11	\$2,365.00	\$28,595.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00	4.75	\$570.00	\$4,440.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			\$220.00
Administrative-DC	\$125.00			
Subcontractors				
ALS				\$5,425.00
Kinnetic Environmental				\$2,851.53
Pacific Ecorisk				\$18,550.00
Direct Expenses				
			\$74.68	\$861.96
G&A 10% (Subs only)				
				\$2,682.65
G&A 15% (ODC's only)				
			\$11.20	\$129.31
Total Invoiced			\$3,020.88	\$66,882.95
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$63,862.07	\$63,862.07
Current Invoice			\$3,020.88	\$3,020.88
Budget Remaining			\$40,117.05	\$40,117.05

Task 8 Amount Due:	\$3,020.88
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	27	\$5,805.00	\$16,232.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH) Bioassessment Services				
Direct Expenses			\$11.79	\$39.30
G&A 10% (Subs only)				
G&A 15% (ODC's only)			\$1.77	\$5.90
Total Invoiced			\$5,818.56	\$16,697.70
TOTALS:				
Authorized Budget			\$42,000.00	\$42,000.00
Prior Invoiced Amount			\$10,879.14	\$10,879.14
Current Invoice			\$5,805.00	\$5,805.00
Budget Remaining			\$25,315.86	\$25,315.86

Task 9 Amount Due:	\$5,818.56
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	14.5	\$3,117.50	\$31,712.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental Bioassessment Services			\$269.34	\$2,974.00
Direct Expenses				
			\$26.20	\$71.83
G&A 10% (Subs only)			\$26.93	\$297.40
G&A 15% (ODC's only)			\$3.93	\$10.78
Total Invoiced			\$3,443.90	\$35,529.01
TOTALS:				
Authorized Budget			\$54,000.00	\$54,000.00
Prior Invoiced Amount			\$32,085.11	\$32,085.11
Current Invoice			\$3,443.90	\$3,443.90
Budget Remaining			\$18,470.99	\$18,470.99

Task 10 Amount Due:	\$3,443.90
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$3,095.50		\$21,736.25
Direct Expenses					
G&A 10% (Subs only)			\$309.55		\$2,173.63
G&A 15% (ODC's only)					
Total Invoiced			\$3,405.05		\$23,909.88
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$20,504.83		\$20,504.83
Current Invoice			\$3,405.05		\$3,405.05
Budget Remaining			\$24,171.12		\$24,171.12

Task 11 Amount Due:	\$3,405.05
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/27

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 2/1/23-2/28/23

Task - Website Support

Task 13 - PRC-23-1

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	0.5	\$107.50	\$107.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Formula Design				\$1,678.64
Direct Expenses				
G&A 10% (Subs only)				\$167.86
G&A 15% (ODC's only)				
Total Invoiced			\$107.50	\$1,954.00
TOTALS:				
Authorized Budget			\$6,000.00	\$6,000.00
Prior Invoiced Amount			\$1,846.50	\$1,846.50
Current Invoice			\$107.50	\$107.50
Budget Remaining			\$4,046.00	\$4,046.00

Task 13 Amount Due:	\$107.50
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Name: Paul Salop	Report Dates:	Report Amounts:
Description: 430-8 WQ sample	Begin Date 2/24/2023	Advance Amount 0.00
Notes: Sample POCs WQ	End Date 2/24/2023	Total Amount 24.89

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
2/24/2023	430	ACCWP	FY23 POCs	Mileage	Paul Salop	38.00	0.6550	24.89			£	£
								Total:		24.89		
								Advance:		0.00		
								Credit Card:		0.00		
								Personal:		0.00		
								Net Due:		24.89		

 Employee Signature

 Date

 Manager Signature

 Date

Approval:	Name	Approved
Supervisor:	Paul Salop	02/25/23
Accounting:	Dovlynn Cammack	02/26/23



Name: Theresa Venello	Report Dates:	Report Amounts:
Description: 430 ACCWP Oakland Sampling	Begin Date 2/24/2023	Advance Amount 0.00
mileage to and from pump sampling stormwater for 430 ACCWP task 8 in	End Date 2/24/2023	Total Amount 42.58
Notes: oakland		

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
2/24/2023	430	ACCWP	FY23 POCs	Mileage		65.00	0.6550	42.58			£	£
								Total:		42.58		
								Advance:		0.00		
								Credit Card:		0.00		
								Personal:		0.00		
								Net Due:		42.58		

 Employee Signature

 Date

 Manager Signature

 Date

Approval:	Name	Approved
Supervisor:	Paul Salop	02/27/23
Accounting:	Dovlynn Cammack	02/27/23



Name: Paul Salop	Report Dates:	Report Amounts:
Description: 430 recons	Begin Date 2/22/2023	Advance Amount 0.00
POC WQ Recon in Oakland	End Date 2/22/2023	Total Amount 19.00
Notes: Trash recons in Dublin		

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
2/22/2023	430	ACCWP	FY23 POCs	Mileage	Paul Salop	11.00	0.6550	7.21			£	£
2/22/2023	430	ACCWP	AC Tasks (FY23 Trash)	Mileage	Paul Salop	18.00	0.6550	11.79			£	£
								Total:				19.00
								Advance:				0.00
								Credit Card:				0.00
								Personal:				0.00
								Net Due:				19.00

 Employee Signature

 Date

 Manager Signature

 Date

Approval:	Name	Approved
Supervisor:	Paul Salop	02/22/23
Accounting:	Dovlynn Cammack	02/26/23



Name: Paul Salop	Report Dates:	Report Amounts:
Description: 430-10 equipment transfer	Begin Date: 2/14/2023	Advance Amount: 0.00
Notes: Retrieve ISCO samplers from ACPWA	End Date: 2/14/2023	Total Amount: 26.20

Date	ID	Project Description	Phase	Expense Item	Payee	Units	Rate	Amount	Reference	Credit Card	Import	Prsnl
2/14/2023	430	ACCWP	FY 23 LID	Mileage	Paul Salop	40.00	0.6550	26.20			£	£
Total:								26.20				
Advance:								0.00				
Credit Card:								0.00				
Personal:								0.00				
Net Due:								26.20				

Employee Signature

Date

Manager Signature

Date

Approval:	Name	Approved
Supervisor:	Paul Salop	02/14/23
Accounting:	Dovlynn Cammack	02/18/23



9057C Soquel Drive, Suite B
 Aptos, California 95003
 Ofc. (831) 457-3950

Invoice No. 13267

430-10

Invoice Date: 02/17/23
Billing Cycle: 01/01/23 - 01/31/23

Bill To:

Applied Marine Sciences
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 Attn: Diane Stafford, Paul Salop

Contract No.: 2022-0001
Task Order No.: 430-003

Remit Payment To:

Kinnetic Environmental, Inc.
 9057C Soquel Drive, Ste B
 Aptos, CA 95003

KEI Project No.: 5880.00

ACCWP - Low Impact Development Monitoring Planning and Preparation

Employee / Item	Title/Description	Hours / Qty	Rate	Amount
Task 1 - Support LID Monitoring Planning				
Christian Kocher	Project Manager	1.50	179.56	269.34
Total Task 1 - Support LID Monitoring Planning				269.34

BALANCE DUE **\$ 269.34**

Total Amount Authorized	15,000.00
Total Billed as of Last Period	2,255.76
Billed this Period	269.34
Total Billed to Date	2,525.10
Total Budget Remaining	12,474.90
Percent Complete	17%

Date	Employee	Task	Hours
Task 1 - LID Monitoring Prep			
01/15/2023	Kocher, Christian	5880.05 LID Monitoring Prep	1.50
	Kocher, Christian Total		1.50



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

430-11

Invoice

Invoice Date: Mar 1, 2023
Invoice Num: AMS001-0123
Billing From: Jan 01, 2023
Billing To: Jan 31, 2023

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.50	\$293.00	\$439.50
Senior Engineer/Scientist III	9.00	\$244.00	\$2,196.00
Associate Engineer/ScientistII	2.50	\$184.00	\$460.00
Total Services:			\$3,095.50

Amount Due This Invoice: **\$3,095.50**

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 18,640.75	\$ 3,095.50	\$ 21,736.25	\$ 21,973.75



March 9, 2023

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda County Public Works Agency
399 Elmhurst St
Hayward, CA 94544

Subject: AMS Invoice 430-21/27 Activities

Dear Sharon,

This project summary describes activities conducted by AMS in February 2023 associated with invoice 430-21/27. Only subtasks for which work was conducted during the invoice period are shown.

Subtask 7 – Creek Status Monitoring - Implementation

- Participation on BAMSC Receiving Water Limitations (RWL) workgroup
- Editing of sections of draft RWL Monitoring Report
- Development / delivery of draft sections of WY 2022 Urban Creeks Monitoring Report (UCMR)

Subtask 8 – Pollutants of Concern Monitoring

- Conducted wet season water quality monitoring in San Leandro Creek

Subtask 9 – Receiving Water Monitoring - Trash

- Coordinated with Zone 7 and City of Dublin staff on location and permitting of target trash monitoring sites
- Researched and conducted reconnaissance of two alternative monitoring locations along Alamo Canal
- Coordinated with Water Board and CDFW staff re: required permitting of target trash monitoring sites
- Coordinated with BAMSC representatives on approach to regional Quality Assurance Project Plan (QAPP) and monitoring plan

Subtask 10 – Low Impact Development Monitoring Planning

- Performed field recon with City of Oakland staff re: redevelopment activities at site of proposed LID monitoring locations
- Performed storm event site recons at proposed monitoring locations
- Continued development / delivery of ACCWP Draft LID Monitoring Plan
- Coordinated with monitoring consultants re: WY 2023 monitoring implementation at proposed sampling sites

Subtask 11 – Facilitate Unsheltered Homeless Work Group

- Attended BAMSC C.17 Work Group meeting on January 24, 2023, on behalf of the ACCWP C.17 Work Group.
- Continued to coordinate with Caltrans staff on C.17 Work Group related topics.

- Continued to coordinate with the Deputy Director of the Homeless Division of the Alameda County Community Development Agency, Housing & Community
- Development Department on sharing data from 2022 Point-In-Time Count.
- Coordinated with ACCWP Data Management – GIS Subcommittee on mapping task.
- Attended ACCWP Management Committee meeting on January 25, 2023, and presented an overview of the MRP 3.0 C.17 requirements and tasks.
- Reviewed final C.17 BMP data collection guidance document and final BMP survey.



April 18, 2023

Invoice No. 430-21/28

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: March 1-31, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$0	\$22,501.00	\$22,501.00	\$0
50201	Task 7 - C8CD-22-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$3,759.13	\$330,000.00	\$207,872.21	\$122,127.80
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$1,436.42	\$107,000.00	\$68,319.37	\$38,680.63
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$11,932.50	\$42,000.00	\$28,630.20	\$13,369.80
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$9,030.00	\$54,000.00	\$44,559.01	\$9,440.99
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$2,686.48	\$48,081.00	\$26,596.36	\$21,484.65
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$1,571.63	\$66,671.00	\$1,571.63	\$65,099.38
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$0	\$6,000.00	\$1,954.00	\$4,046.00
Total:					\$30,416.16	\$1,227,303.00	\$947,838.24	\$279,464.76

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

Okay to pay G33

Sg

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 7 - Creek Status Monitoring - Implementation

Task PRC-22-1

		Subtask 1			Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00	11	\$2,365.00		\$59,230.00
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				\$647.50
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				\$1,842.50
Staff Scientist-TV	\$120.00				\$10,560.00
Administrative-DS	\$110.00				
Administrative-DC	\$125.00	1	\$125.00		\$125.00
<u>Subcontractors</u>					
Kinnetic Environmental					\$32,591.93
Bioassessment Services					\$18,301.89
San Jose State University					\$3,075.00
Benjamin Salop					\$360.00
Ecoanalysts					\$31,437.00
Caltest					\$17,488.30
Coastal Conservation & Research			\$1,153.75		\$1,153.75
Pacific Ecorisk					\$18,200.50
<u>Direct Expenses</u>					
					\$520.00
G&A 10% (Subs only)			\$115.38		\$12,260.84
G&A 15% (ODC's only)					\$78.00
Total Invoiced			\$3,759.13		\$207,872.21
TOTALS:					
Authorized Budget			\$330,000.00		\$330,000.00
Prior Invoiced Amount			\$204,113.08		\$204,113.08
Current Invoice			\$3,759.13		\$3,759.13
Budget Remaining			\$122,127.80		\$122,127.80

Task 7 Amount Due:	\$3,759.13
---------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	2	\$430.00	\$29,025.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00			\$4,440.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00	0.5	\$55.00	\$275.00
Administrative-DC	\$125.00			
Subcontractors				
ALS			\$643.00	\$6,068.00
Kinnetic Environmental				\$2,851.53
Pacific Ecorisk				\$18,550.00
Direct Expenses				
			\$212.28	\$1,074.24
G&A 10% (Subs only)				
			\$64.30	\$2,746.95
G&A 15% (ODC's only)				
			\$31.84	\$161.15
Total Invoiced			\$1,436.42	\$68,319.37
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$66,882.95	\$66,882.95
Current Invoice			\$1,436.42	\$1,436.42
Budget Remaining			\$38,680.63	\$38,680.63

Task 8 Amount Due:	\$1,436.42
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00	55.5	\$11,932.50			\$28,165.00
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Staff Scientist-TV	\$120.00					\$420.00
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
Kinnetic Environmental (ADH)						
Bioassessment Services						
Direct Expenses						
G&A 10% (Subs only)						
G&A 15% (ODC's only)						
Total Invoiced			\$11,932.50			\$28,630.20
TOTALS:						
Authorized Budget			\$42,000.00			\$42,000.00
Prior Invoiced Amount			\$16,697.70			\$16,697.70
Current Invoice			\$11,932.50			\$11,932.50
Budget Remaining			\$13,369.80			\$13,369.80

Task 9 Amount Due:	\$11,932.50
---------------------------	--------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

			Subtask 1				Task Total
Labor	Rate	Hours	Charges				
Principal Scientist-JJ	\$231.75						
Program Manager-PS	\$215.00	42	\$9,030.00				\$40,742.50
Principal Scientist-MB	\$165.00						
Principal Scientist-AM	\$185.00						\$462.50
Staff Scientist-ES	\$110.00						
Staff Scientist-EG	\$110.00						
Staff Scientist-CH	\$115.00						
Administrative-DS	\$110.00						
Administrative-DC	\$125.00						
Subcontractors							
Kinnetic Environmental Bioassessment Services							\$2,974.00
Direct Expenses							\$71.83
G&A 10% (Subs only)							\$297.40
G&A 15% (ODC's only)							\$10.78
Total Invoiced			\$9,030.00				\$44,559.01
TOTALS:							
Authorized Budget			\$54,000.00				\$54,000.00
Prior Invoiced Amount			\$35,529.01				\$35,529.01
Current Invoice			\$9,030.00				\$9,030.00
Budget Remaining			\$9,440.99				\$9,440.99

Task 10 Amount Due:	\$9,030.00
----------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$2,442.25		\$24,178.50
Direct Expenses					
G&A 10% (Subs only)			\$244.23		\$2,417.86
G&A 15% (ODC's only)					
Total Invoiced			\$2,686.48		\$26,596.36
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$23,909.88		\$23,909.88
Current Invoice			\$2,686.48		\$2,686.48
Budget Remaining			\$21,484.65		\$21,484.65

Task 11 Amount Due:	\$2,686.48
----------------------------	-------------------

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/28

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 3/1/23-3/31/23

Task 12 - Asset Management Framework

Task CW21-23 EOA

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00					
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Staff Scientist-CH	\$115.00					
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
EOA, Inc.			\$1,428.75			\$1,428.75
Direct Expenses						
G&A 10% (Subs only)			\$142.88			\$142.88
G&A 15% (ODC's only)						
Total Invoiced			\$1,571.63			\$1,571.63
TOTALS:						
Authorized Budget			\$66,671.00			\$66,671.00
Prior Invoiced Amount						
Current Invoice			\$1,571.63			\$1,571.63
Budget Remaining			\$65,099.38			\$65,099.38

Task 12 Amount Due:	\$1,571.63
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FedEx Billing Online

Tracking ID Details

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Tracking ID Summary

[Help Hide](#)

Billing Information

Tracking ID no. 771441962418
 Invoice no. 5-670-67995
 Account no. 1448-0745-6
 Bill date 03/01/2023
 Total Billed \$212.28
Tracking ID Balance due \$0.00
 Status Paid CC

Messages

We calculated your charges based on a dimensional [Read More..](#)
 Distance Based Pricing, Zone 4
 Fuel Surcharge - FedEx has applied a fuel surcharg [Read More..](#)

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Transaction Details

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Sender Information

Dovlynn Cammack
 APPLIED MARINE SCIENCES, INC
 4749 Bennett Drive
 Suite L
 LIVERMORE CA 94551
 US

Recipient Information

Karen Melerine
 ALS Global
 1317 S 13TH AVE
 KELSO WA 98626
 US

Shipment Details

Ship date 03/01/2023
 Tendered date 03/01/2023
 Payment type Shipper
 Service type FedEx Priority Overnight
 Zone 04
 Package type Customer Packaging
 Actual weight 10.00lbs
 Rated weight 16.00lbs
 Pieces 1
 Rated method 1
 Meter No. 4857903
 Declared value

Charges

Transportation Charge	184.12
Discount	-9.21
DAS Comm	3.70
Courier Pickup Charge	4.00
Fuel Surcharge	29.67
Total charges	\$212.28

Original Reference

Customer reference no. 430-8
 Department no.
 Reference #2
 Reference #3

Proof of Delivery

Delivery date 2023-03-02T10:16:0010:16
 Service area code AA
 Signed by H.HALLANDER

[View signature proof of delivery](#)

[Back](#)



right solutions.
right partner.

Remit To: ALS Group USA, Corp.
PO Box 975444
Dallas, TX 75397-5444
Attn: Accounts Receivable
TEL: +1 281 530 5656
FAX: +1 281 561 6125
T.I.N.: 76-0606679

INVOICE

Service Request: K2302487
Customer No.: 207712-01

Invoice No.: 36-51-611777-0
Invoice Date: 4/14/23
P.O. Number: 3411
Payment Terms: Net 30

Project Name: AMS-ACCWP
Project Number:

430-8

Attn: Paul Salop
Applied Marine Sciences, Incorporated
salop@amarine.com
4749 Bennett Dr. Suite L
Livermore, CA 94551

Report To: Paul Salop
Applied Marine Sciences, Incorporated
4749 Bennett Dr. Suite L
Livermore, CA 94551

ALS Project Manager: Karen Melerine(karen.melerine@ALSGlobal.com)
Phone: +1 360 577 7222
ALS Sales Rep: Howard Boorse

Samples submitted on: 3/2/23

Analytical Services

Storm Water

Method	Test Description	QTY	Unit Price	TAT Surcharge	Adj Unit Price	Extended Price
1631E	Total Mercury by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry	2	\$100.00	0%	\$100.00	\$200.00 K
8082A	Polychlorinated Biphenyl (PCB) Congeners by GC/ECD	1	\$325.00	0%	\$325.00	\$325.00 K
SM 2540 D	Total Suspended Solids Dried at 103-105 Deg C 20th Ed.	1	\$20.00	0%	\$20.00	\$20.00 K
SM 5310 C	Total Organic Carbon (TOC), Persulfate-Ultraviolet or Heated-Persulfate Oxidation 20th Ed.	1	\$48.00	0%	\$48.00	\$48.00 K

Other Services and Supplies

Description	QTY	Unit Price	Unit Percent	Tax Rate	Extended Price
Sustainability Fee - Cost per work order/SDG/CoC	1.00	\$50.00	0.00		\$50.00 K

Subtotals

Analytical Services: \$593.00
Other Charges: \$50.00
Applicable Tax: \$0.00

Amount Due (USD): \$643.00

Client Sample IDs: 204SLE020-W-01 to -04, Field Blank

Penalty of \$150, plus 1.5% interest per month (18% per year) charge on past due accounts. Clients are also responsible for any collection costs.

Subject to ALS Terms & Conditions

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www.alsglobal.com

Printed 4/14/23 12:17

Page 1 of 1
S6.2.149



Coastal Conservation & Research, Inc.
 PO Box 543
 Moss Landing, CA 95039
 www.ccandr.org

INVOICE

Invoice # **2164**
 Date: 4/10/2023
 Billing Period: 1/1/23-3/31/23

\$1,153.75 - 430-7
 \$1,153.75 - 199-3

To:
 Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Dr, Ste L
 Livermore, CA 94551

Project: ACCWP RMC and CCLEAN Data Management Services - 2023 Q1

Task	Cost/ Task	Total Tasks	Task Cost
Data management tasks including vocabulary review, loading of bioassessment (physical habitat, benthic and algae taxonomy) and water quality (field, habitat, chemistry, toxicity) data, GIS watershed delineations and metric calculations, and bioassessment metric and index (IPI, CSCI, ASCI) calculations.	\$2,307.50	1	\$2,307.50
Total Cost			\$2,307.50

Invoice Amount: \$2,307.50

INVOICE IS PAYABLE UPON RECEIPT
 Make checks payable to CCR, Inc.
 Fed ID# 91-2081300



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

Invoice

Mr Paul Salop 430-11
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Invoice Date: Mar 30, 2023
Invoice Num: AMS001-0223
Billing From: Feb 01, 2023
Billing To: Feb 28, 2023

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.25	\$293.00	\$366.25
Senior Engineer/Scientist III	7.00	\$244.00	\$1,708.00
Associate Engineer/ScientistII	2.00	\$184.00	\$368.00
Total Services:			\$2,442.25

Amount Due This Invoice: **\$2,442.25**

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 21,736.25	\$ 2,442.25	\$ 24,178.50	\$ 19,531.50



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

Invoice

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

430-12

Invoice Date: Mar 30, 2023
Invoice Num: AMS002-0223
Billing From: Feb 01, 2023
Billing To: Feb 28, 2023

Project: ACCWP Asset Management Framework

Draft Framework (AMS002:02) - **PO#:** TO #2022-0002 (430-002) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.25	\$303.00	\$378.75
Senior Engineer/Scientist I	5.00	\$210.00	\$1,050.00
Total Services:			\$1,428.75

Amount Due This Invoice: **\$1,428.75**

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 60,610.00	\$ 72.75	\$ 1,428.75	\$ 1,501.50	\$ 59,108.50



April 18, 2023

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda County Public Works Agency
399 Elmhurst St
Hayward, CA 94544

Subject: AMS Invoice 430-21/28 Activities

Dear Sharon,

This project summary describes activities conducted by AMS in March 2023 associated with invoice 430-21/28. Only subtasks for which work was conducted during the invoice period are shown.

Subtask 7 – Creek Status Monitoring - Implementation

- Participation on BAMSC Receiving Water Limitations (RWL) workgroup
- Review and editing sections of draft RWL Monitoring Report
- Revision of draft sections of WY 2022 Urban Creeks Monitoring Report (UCMR)
- Participation in coordination meetings with Geosyntec and Jim Scanlin
- Review and comment on 2024 303(d) listings for Alameda County

Subtask 8 – Pollutants of Concern Monitoring

- Coordination with analytical laboratory
- Invoice for WQ analyses (ALS)

Subtask 9 – Receiving Water Monitoring - Trash

- Conducted site recons of drainage management area upstream of alternative monitoring site near Dublin Public Safety Complex.
- Coordinated with Oldcastle re: cost estimate and engineering design
- Coordinated with Zone 7 and City of Dublin staff on location and permitting of target trash monitoring sites
- Coordinated with Water Board and CDFW staff re: Streambed Alteration Agreement submittal
- Developed outline for Trash Monitoring Plan and began drafting sections
- Initiated work on BAMSC regional project to develop Trash Quality Assurance Project Plan

Subtask 10 – Low Impact Development Monitoring Planning

- Coordinated with City of Oakland staff re: redevelopment of property adjacent to proposed LID monitoring location and potential replacement sites
- Performed storm event site recons at proposed and alternative monitoring locations
- Continued development / delivery of ACCWP Draft LID Monitoring Plan
- Participated in planning for Technical Advisory Group (TAG) meeting #2
- Developed and presented status update for ACCWP at TAG meeting #2
- Began planning and development of cost estimates for conduct of monitoring

Subtask 11 – Facilitate Unsheltered Homeless Work Group

- Prepared agenda and coordinated ACCWP C.17 Work Group meeting on February 27, 2023

- Continued to coordinate with Caltrans staff on C.17 Work Group related topics.
- Continued to coordinate with Alameda County Public Works Agency staff on
- acquiring GIS data from the 2022 Point-In-Time Count from the Deputy Director of the Homeless Division of the Alameda County Community Development Agency, Housing & Community Development Department.
- Coordinated with ACCWP Data Management – GIS Subcommittee on mapping task.
- Attended ACCWP Management Committee meeting on February 22, 2023 and provided summary bullets for January meeting summary.
- Emailed BMP report survey to Management Committee representatives on February 13, 2023
- Emailed ACCWP C.17 Work Group on February 13, 2023 and notified the Work Group that the BMP survey had been sent out to the MC representatives.
- Began tracking and collecting completed BMP report surveys from Permittees.

Subtask 12 – ACCWP Asset Mnnagement Framework

- Reviewed regulatory requirements and background materials.
- Developed draft list of assets required to be managed.



May 9, 2023

Invoice No. 430-21/29

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: April 1-30, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$0	\$22,501.00	\$22,501.00	\$0
50201	Task 7 - C8CD-23-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$1,133.13	\$210,000.00	\$209,005.34	\$994.66
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$0	\$107,000.00	\$68,319.37	\$38,680.63
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$1,827.50	\$86,000.00	\$30,457.70	\$55,542.30
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$7,507.19	\$130,000.00	\$52,066.20	\$77,933.80
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$3,223.28	\$48,081.00	\$29,819.64	\$18,261.37
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$1,947.28	\$66,671.00	\$3,518.91	\$63,152.10
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$0	\$6,000.00	\$1,954.00	\$4,046.00
Total:					\$15,638.38	\$1,227,303.00	\$963,476.62	\$263,826.38

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

Okay to pay G33 *Sg*

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/29

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 4/1/23-4/30/23

Task 7 - Creek Status Monitoring - Implementation

Task PRC-23-1

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00	2	\$430.00			\$59,660.00
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					\$647.50
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					\$1,842.50
Staff Scientist-TV	\$120.00					\$10,560.00
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					\$125.00
<u>Subcontractors</u>						
Kinnetic Environmental						\$32,591.93
Bioassessment Services						\$18,301.89
San Jose State University						\$3,075.00
Benjamin Salop						\$360.00
Ecoanalysts						\$31,437.00
Caltest						\$17,488.30
Coastal Conservation & Research						\$1,153.75
Pacific Ecorisk						\$18,200.50
<u>Direct Expenses</u>			\$611.42			\$1,131.42
G&A 10% (Subs only)						\$12,260.84
G&A 15% (ODC's only)			\$91.71			\$169.71
Total Invoiced			\$1,133.13			\$209,005.34
TOTALS:						
Authorized Budget			\$210,000.00			\$210,000.00
Prior Invoiced Amount			\$207,872.21			\$207,872.21
Current Invoice			\$1,133.13			\$1,133.13
Budget Remaining			\$994.66			\$994.66

Task 7 Amount Due:	\$1,133.13
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/29

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 4/1/23-4/30/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	8.5	\$1,827.50	\$29,992.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH)				
Bioassessment Services				
Direct Expenses				\$39.30
G&A 10% (Subs only)				
G&A 15% (ODC's only)				\$5.90
Total Invoiced			\$1,827.50	\$30,457.70
TOTALS:				
Authorized Budget			\$86,000.00	\$86,000.00
Prior Invoiced Amount			\$28,630.20	\$28,630.20
Current Invoice			\$1,827.50	\$1,827.50
Budget Remaining			\$55,542.30	\$55,542.30

Task 9 Amount Due:	\$1,827.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/29

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 4/1/23-4/30/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	19.5	\$4,192.50	\$44,935.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-TV	\$120.00	2	\$240.00	\$240.00
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental				\$2,974.00
San Francisco Estuary Institute			\$2,795.17	\$2,795.17
Direct Expenses				
				\$71.83
G&A 10% (Subs only)			\$279.52	\$576.92
G&A 15% (ODC's only)				\$10.78
Total Invoiced			\$7,507.19	\$52,066.20
TOTALS:				
Authorized Budget			\$130,000.00	\$130,000.00
Prior Invoiced Amount			\$44,559.01	\$44,559.01
Current Invoice			\$7,507.19	\$7,507.19
Budget Remaining			\$77,933.80	\$77,933.80

Task 10 Amount Due:	\$7,507.19
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/29

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 4/1/23-4/30/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$2,930.25		\$27,108.75
Direct Expenses					
G&A 10% (Subs only)			\$293.03		\$2,710.89
G&A 15% (ODC's only)					
Total Invoiced			\$3,223.28		\$29,819.64
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$26,596.36		\$26,596.36
Current Invoice			\$3,223.28		\$3,223.28
Budget Remaining			\$18,261.37		\$18,261.37

Task 11 Amount Due:	\$3,223.28
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/29

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 4/1/23-4/30/23

Task 12 - Asset Management Framework

Task CW21-23 EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$1,770.25		\$3,199.00
Direct Expenses					
G&A 10% (Subs only)			\$177.03		\$319.91
G&A 15% (ODC's only)					
Total Invoiced			\$1,947.28		\$3,518.91
TOTALS:					
Authorized Budget			\$66,671.00		\$66,671.00
Prior Invoiced Amount			\$1,571.63		\$1,571.63
Current Invoice			\$1,947.28		\$1,947.28
Budget Remaining			\$63,152.10		\$63,152.10

Task 12 Amount Due:	\$1,947.28
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430-7

Order Confirmation

100 Matsonford Road
Radnor, PA 19087
t: +1 800 932 5000 f: +1 866 329 2897

Click your order number **8367457717** to view current order status 🚚

Sold-To-Party	Information
APPLIED MARINE SCIENCES 4749 BENNETT DR STE L LIVERMORE CA 94551-4858	Order 8367457717 Date 03/23/2023 Sold To Customer No. 80213468 Ship To Customer No. 80213468 Contact Name Dovlynn Cammack Telephone Email cammack@amarine.com Currency USD Sales Rep DI INSDSLS-West 2 DIMITRI FAILLA Cust ref Reference W30931453 PO No 3416 PO Date 03/23/2023
Ship-To-Party	
Theresa Venello APPLIED MARINE SCIENCES 4749 BENNETT DR STE L LIVERMORE CA 94551-4858	

Information	
Term:	Standard terms and conditions unless otherwise agreed.
Pricing:	We reserve the right to supply the products at the prices valid at the time of delivery. If pricing changes after your order is placed, we will provide you a Price Change Notification with the new price(s) prior to delivery. If you do not agree to this term, you must inform us in writing within five calendar days from the date of this order confirmation. Please contact Customer Service at vwrcustomerservice@avantorsciences.com .

Item	Ref.	Catalog Number	Quantity	Unit Price	Ext. Amount
100		28145-142	1 PK	554.58	554.58
		FILTER AQUAPREP 600 PK10			
		Shipping From Visalia Distribution Center, Estimated Delivery Date			
		05/17/2023			

		Item Total			554.58
		Tax			56.84
		Total			611.42

Unless governed by a separate written agreement, sales are subject to VWR's standard terms and conditions of sale. Visit www.vwr.com for complete details.

Invoice

**San Francisco Estuary Institute
4911 Central Ave.
Richmond, CA 94804
EIN 94-2951373**

430-10

April 13, 2023
Project No: 1140.00
Invoice No: 1140001

Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94550

Project 1140.00 ACCWP_POC Implementatioin TAG
AMS Contract No.21346
Task Order #2002-003 (430-002)

Professional Services from February 23, 2023 to March 31, 2023

Task 001 Year 1 TAG Participation (FY23)

Professional Personnel

	Hours	Rate	Amount
Manager/Sr Scientist I-IV/Sr Tech Spec I			
Gilbreath, Alicia	18.25	153.16	2,795.17
Totals	18.25		2,795.17
Total Labor			2,795.17
		Total this Task	\$2,795.17

Billing Limits	Current	Prior	To-Date
Total Billings	2,795.17	0.00	2,795.17
Limit			8,000.00
Remaining			5,204.83
		Total this Invoice	\$2,795.17

Project Manager

DocuSigned by:
Alicia Gilbreath
21F175AB06F940B...
Alicia Gilbreath

Date: 4/26/2023



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

430-11

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Invoice

Invoice Date: Apr 24, 2023
Invoice Num: AMS001-0323
Billing From: Mar 01, 2023
Billing To: Mar 31, 2023

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	1.25	\$293.00	\$366.25
Senior Engineer/Scientist III	6.50	\$244.00	\$1,586.00
Associate Engineer/ScientistIII	2.00	\$184.00	\$368.00
Total Services:			\$2,320.25

Draft BMP Report (AMS001:02) - PO#: TO #2022-0002 (430-001) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Senior Engineer/Scientist III	2.50	\$244.00	\$610.00
Total Services:			\$610.00

Amount Due This Invoice: \$2,930.25

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 43,710.00	\$ 24,178.50	\$ 2,930.25	\$ 27,108.75	\$ 16,601.25



EOA, Inc.
 1410 Jackson St.
 Oakland, CA 946124010
 Tel: (510) 832-2852
 www.eoainc.com

430-12

Mr Paul Salop
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551

Invoice

Invoice Date: Apr 24, 2023
Invoice Num: AMS002-0323
Billing From: Mar 01, 2023
Billing To: Mar 31, 2023

Project: ACCWP Asset Management Framework

Draft Framework (AMS002:02) - **PO#:** TO #2022-0002 (430-002) - Managed by (KAK)

Professional Services:

<u>Employee Title</u>		<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Senior Manager I		2.50	\$307.00	\$767.50
Managing Eng./Sci. III	Text	1.75	\$303.00	\$530.25
Senior Engineer/Scientist I		2.25	\$210.00	\$472.50
Total Services:				\$1,770.25

Amount Due This Invoice: **\$1,770.25**

This invoice is due upon receipt

EOA, Inc.
 Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$ 60,610.00	\$ 1,501.50	\$ 1,770.25	\$ 3,271.75	\$ 57,338.25



May 8, 2023

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda County Public Works Agency
399 Elmhurst St
Hayward, CA 94544

Subject: AMS Invoice 430-21/29 Activities

Dear Sharon,

This project summary describes activities conducted by AMS in April 2023 associated with invoice 430-21/29. Only subtasks for which work was conducted during the invoice period are shown.

Subtask 7 – Creek Status Monitoring - Implementation

- Participation in coordination meetings with Geosyntec and Jim Scanlin
- Participation in ACCWP MPC meeting
- Purchase in-line filters for upcoming Receiving Water Limitations (RWL) trace metals sampling

Subtask 9 – Receiving Water Monitoring - Trash

- Conducted site visits with Oldcastle at four proposed monitoring locations to develop plans for site work
- Coordinated with Oldcastle re: cost estimate and engineering design
- Coordinated with Zone 7 and City of Dublin staff on location and permitting of target trash monitoring sites
- Coordinated with BAMSC workgroup and developed sections of regional Trash Monitoring Plan
- Developed first draft of Trash Quality Assurance Project Plan (QAPP)

Subtask 10 – Low Impact Development Monitoring Planning

- Coordinated with City of Oakland staff re: target monitoring locations
- Performed storm event site recons at revised monitoring locations
- Prepared revised ACCWP LID Monitoring Plan to address changes in study design
- Prepared revised BAMSC LID Monitoring QAPP
- Participated in regional planning meetings for LID workgroup
- Incorporates SFEI subcontractor invoice for Year 1 participation on LID Technical Advisory Group

Subtask 11 – Facilitate Unsheltered Homeless Work Group

- Prepared meeting summary for February 2023 ACCWP C.17 Work Group meeting
- Attended BAMSC C.17 Work Group meeting on March 13, 2023, on behalf of the ACCWP C.17 Work Group.
- Continued to coordinate with Caltrans staff on C.17 Work Group related topics.
- Met with Alameda County Public Works Agency staff on March 15, 2023 to discuss coordination with the Deputy Director of the Homeless Division of the Alameda County Community

Development Agency, Housing & Community Development Department on sharing data from 2022 Point-In-Time Count.

- Provided summary bullets for ACCWP Management Committee meeting on March 22, 2023 and February meeting summary.
- Collected BMP report surveys from Permittees. All permittees responded except Zone 7. Eleven permittees returned completed surveys.

Subtask 12 – ACCWP Asset Management Framework

- Began work on development of draft framework.
- Met with ACCWP Interim Program Manager and Management Committee Chair on March 16 to discuss updated project schedule and approach.
- Developed estimated budget for FY 23-24.



**LARRY WALKER
ASSOCIATES**
science | policy | solutions

1480 Drew Avenue
Suite 100
Davis, CA 95618

530.753.6400
ar@lwa.com
lwa.com

August 24, 2022

Anita Franklin
Alameda Countywide Clean Water Program
and Water Conservation District
399 Elmhurst Street
Hayward, CA 94544

Re: Invoice #20
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description		
436.14	ACCW - Municipal Regional Stormwater Permit Compliance Services	\$	56,783.00
	Invoice #20 Total	\$	56,783.00



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

August 17, 2022
Project No. - Invoice No: 00436.14-20

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES
Project: 00436.14
PO # 7573
For Services Rendered Through 7/31/2022
Contract # 21344

Task: 06 MRP 3 & PCBs Implementation Support (POCs-22-1)

Consultants

Payee		Cost	Markup	Amount
Environmental Consultant				
8/3/2022 Geosyntec Consultants	Inv. #479836	11,975.00	1.100	\$13,172.50
Total Consultants				\$13,172.50
Total This Task				\$13,172.50

Task: 07 Monitoring Support (MPC-22-1)

Consultants

Payee		Cost	Markup	Amount
Environmental Consultant				
8/3/2022 Geosyntec Consultants	Inv. #479836	12,757.50	1.100	\$14,033.25
Total Consultants				\$14,033.25
Total This Task				\$14,033.25

Task: 09.1 NDS Baseline Support (NDS-22-1)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	16.50	315.00	\$5,197.50
VanCarpels, Tina	1.25	135.00	\$168.75
Total Labor			\$5,366.25

Total This Task \$5,366.25

Task: 09.2 C3TG Update (NDS-22-1)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	2.50	315.00	\$787.50
McFadin, Sophie	19.75	126.00	\$2,488.50
VanCarpels, Tina	.75	135.00	\$101.25

Total Labor \$3,377.25

Total This Task \$3,377.25

Task: 10 GI SOP Development (MM-22-3)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Constantinescu, Alina	2.00	224.00	\$448.00
Fulton, Ryan	11.50	202.00	\$2,323.00
Mathews, Sandra	1.50	315.00	\$472.50
VanCarpels, Tina	.75	135.00	\$101.25

Total Labor \$3,344.75

Total This Task \$3,344.75

Task: 11 Annual Report Support (PRC-22-3)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	34.00	126.00	\$4,284.00
Mathews, Sandra	.25	315.00	\$78.75
VanCarpels, Tina	1.50	135.00	\$202.50
Warren, Rachel	9.75	260.00	\$2,535.00

Total Labor \$7,100.25

Total This Task \$7,100.25

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	9.25	315.00	\$2,913.75
VanCarpels, Tina	1.00	135.00	\$135.00

Total Labor \$3,048.75

Total This Task \$3,048.75

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Cholico Santoyo, Zaida	7.25	160.00	\$1,160.00

Mathews, Sandra	10.50	315.00	\$3,307.50
VanCarpels, Tina	.50	135.00	\$67.50
Total Labor			\$4,535.00
Total This Task			\$4,535.00

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	1.50	315.00	\$472.50
Total Labor			\$472.50
Total This Task			\$472.50

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.50	135.00	\$67.50
Yin, Elizabeth	7.50	260.00	\$1,950.00
Total Labor			\$2,017.50
Total This Task			\$2,017.50

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	1.00	315.00	\$315.00
Total Labor			\$315.00
Total This Task			\$315.00

Invoice Amount **\$56,783.00**

Billing Limits	Current	Prior	To-date
Total Billings	56,783.00	371,706.12	428,489.12
Limit			1,800,000.00
Remaining			1,371,510.88

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 20 BILLING PERIOD: July 1 - 31, 2022
 INVOICE DATE: July 12, 2022

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	-\$1,369.75
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	69,582.13	13,172.50	82,754.63	16,245.37
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	24,967.25	14,033.25	39,000.50	6,999.50
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	18,014.25	8,743.50	26,757.75	33,242.25
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	19,519.25	3,344.75	22,864.00	7,136.00
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$15,000.00	2,301.00	7,100.25	9,401.25	5,598.75
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	-	8,056.25	8,056.25	60,943.75
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	-	-	-	10,000.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	-	2,332.50	2,332.50	86,867.50
TOTALS					\$703,800.00	\$371,706.12	\$56,783.00	\$428,489.12	\$275,310.88



PLEASE REMIT PAYMENT TO:
Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
707 4TH STREET, SUITE 200
DAVIS, CA 95616

Project: [436.14](#)
[517](#)
 Task 6: [\\$11,975.00](#)
 Task 7: [\\$12,757.50](#)
 Total: [\\$24,732.50](#)

Invoice # : 479836
Project : CWR0649A
Invoice Date : 8/3/2022
Project Name : ACCWP ON-CALL FY2022

For Professional Services Rendered through transaction date: 7/31/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA AUSTIN AT (510) 285-2757

LWA PROJECT NO. 436.14 Task 6

Professional Services	\$24,582.50
Reimbursable Expenses	\$150.00
Current Invoice	----- \$24,732.50

****Amount Due This Invoice **** **\$24,732.50**

Statement

Prior Billings	\$97,993.75
Current Invoice	\$24,732.50
Billed To Date	\$122,726.25
Paid To Date	\$65,091.25

Statement

Project Budget	\$155,660.00
Expended to Date	\$122,726.25
Contract Balance	\$32,933.75
**Amount Due This Invoice **	\$24,732.50

Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

Task : 01) SOURCE PROPERTY REFERRALS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	07/02/2022	0.25	150.00	37.50
	07/05/2022	0.50	150.00	75.00
	07/06/2022	0.75	150.00	112.50
Total: STAFF PROFESSIONAL		1.50		225.00
PROJECT PROFESSIONAL				
WELSH, LISA	07/01/2022	4.50	230.00	1,035.00
	07/05/2022	3.25	230.00	747.50
	07/06/2022	0.75	230.00	172.50
	07/18/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		9.00		2,070.00
SENIOR PRINCIPAL				
AUSTIN, LISA	07/05/2022	0.50	300.00	150.00
	07/06/2022	0.75	300.00	225.00
Total: SENIOR PRINCIPAL		1.25		375.00
Total Task : 01) SOURCE PROPERTY REFERRALS			Task Labor	2,670.00

Task : 03) POC LOAD REDUCTION REPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	07/18/2022	0.50	150.00	75.00
	07/19/2022	2.00	150.00	300.00
	07/20/2022	4.00	150.00	600.00
	07/21/2022	3.25	150.00	487.50
	07/25/2022	1.50	150.00	225.00
	07/26/2022	0.50	150.00	75.00
	07/27/2022	1.75	150.00	262.50
	07/28/2022	3.50	150.00	525.00
Total: STAFF PROFESSIONAL		17.00		2,550.00
PROJECT PROFESSIONAL				
WELSH, LISA	07/13/2022	0.50	230.00	115.00
	07/14/2022	0.25	230.00	57.50
	07/18/2022	1.25	230.00	287.50
	07/19/2022	0.25	230.00	57.50
	07/20/2022	0.75	230.00	172.50
	07/25/2022	0.50	230.00	115.00
	07/25/2022	0.25	230.00	57.50
	07/26/2022	0.50	230.00	115.00
	07/27/2022	0.25	230.00	57.50
	07/28/2022	0.25	230.00	57.50
	07/29/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		5.50		1,265.00
SENIOR PRINCIPAL				
AUSTIN, LISA	07/17/2022	1.50	300.00	450.00
	07/18/2022	0.25	300.00	75.00

Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	07/24/2022	1.00	300.00	300.00
	07/26/2022	0.25	300.00	75.00
	07/29/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		3.25		975.00

Total Task : 03) POC LOAD REDUCTION REPORT

Task Labor

4,790.00

Task : 04) WORKGROUP MEETINGS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	07/19/2022	2.00	150.00	300.00
PROJECT PROFESSIONAL				
WELSH, LISA	07/05/2022	0.25	230.00	57.50
	07/06/2022	1.00	230.00	230.00
	07/08/2022	0.50	230.00	115.00
	07/11/2022	0.25	230.00	57.50
	07/19/2022	4.25	230.00	977.50
	07/20/2022	0.75	230.00	172.50
	07/22/2022	0.25	230.00	57.50
	07/27/2022	0.50	230.00	115.00
	07/28/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		8.00		1,840.00
SENIOR PRINCIPAL				
AUSTIN, LISA	07/08/2022	0.25	300.00	75.00
	07/19/2022	2.25	300.00	675.00
Total: SENIOR PRINCIPAL		2.50		750.00

Total Task : 04) WORKGROUP MEETINGS

Task Labor

2,890.00

Task : 06) COMPILE AC BUILDING MATERIAL D

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	07/29/2022	1.25	150.00	187.50
PROJECT PROFESSIONAL				
WELSH, LISA	07/06/2022	0.50	230.00	115.00
	07/11/2022	0.25	230.00	57.50
	07/13/2022	2.50	230.00	575.00
	07/15/2022	0.25	230.00	57.50
	07/20/2022	0.75	230.00	172.50
	07/21/2022	0.25	230.00	57.50
	07/25/2022	0.25	230.00	57.50
	07/26/2022	0.75	230.00	172.50
	07/27/2022	0.25	230.00	57.50
	07/28/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		6.25		1,437.50

Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

Total Task : 06) COMPILE AC BUILDING MATERIAL D

Task Labor

1,625.00

Total Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

Phase Labor

11,975.00

Phase : 04) TASK 7 MONITORING SUPPORT AP

Task : 05) MRP 3.0 MONITORING PLANNING

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	07/05/2022	4.00	150.00	600.00
	07/06/2022	3.75	150.00	562.50
	07/07/2022	3.00	150.00	450.00
	07/08/2022	0.75	150.00	112.50
	07/13/2022	4.00	150.00	600.00
	07/14/2022	2.00	150.00	300.00
	07/15/2022	2.50	150.00	375.00
	07/18/2022	2.00	150.00	300.00
	07/18/2022	2.00	150.00	300.00
	07/21/2022	1.50	150.00	225.00
	07/28/2022	1.00	150.00	150.00
Total: STAFF PROFESSIONAL		26.50		3,975.00
PROJECT PROFESSIONAL				
WELSH, LISA	07/07/2022	1.50	230.00	345.00
	07/08/2022	1.50	230.00	345.00
	07/13/2022	1.25	230.00	287.50
	07/14/2022	2.50	230.00	575.00
	07/15/2022	0.25	230.00	57.50
	07/18/2022	0.75	230.00	172.50
	07/19/2022	0.25	230.00	57.50
	07/20/2022	0.75	230.00	172.50
	07/21/2022	1.50	230.00	345.00
	07/22/2022	0.25	230.00	57.50
	07/25/2022	0.50	230.00	115.00
	07/26/2022	0.25	230.00	57.50
	07/27/2022	1.50	230.00	345.00
	07/28/2022	1.50	230.00	345.00
	07/29/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		14.75		3,392.50
PRINCIPAL				
PERKINS, RINTA	07/28/2022	1.25	280.00	350.00
	07/29/2022	0.75	280.00	210.00
Total: PRINCIPAL		2.00		560.00
SENIOR PRINCIPAL				
AUSTIN, LISA	07/07/2022	1.25	300.00	375.00
	07/08/2022	0.75	300.00	225.00
	07/13/2022	1.00	300.00	300.00
	07/14/2022	1.25	300.00	375.00
	07/18/2022	0.25	300.00	75.00
	07/21/2022	0.25	300.00	75.00
	07/22/2022	0.25	300.00	75.00

Phase : 04) TASK 7 MONITORING SUPPORT AP

Class / Employee Name	Date	Hours	Rate	Amount
SENIOR PRINCIPAL				
AUSTIN, LISA	07/28/2022	1.00	300.00	300.00
Total: SENIOR PRINCIPAL		6.00		1,800.00

Vendor / Employee Name	Doc Nbr	Date	Units	Rate	Amount
GIS COMPUTER TIME					
YAO, GRACE	005646	07/05/2022	4.00	10	40.00
	005646	07/06/2022	3.75	10	37.50
	005646	07/07/2022	3.00	10	30.00
	005646	07/08/2022	0.75	10	7.50
	005646	07/18/2022	2.00	10	20.00
	005646	07/21/2022	1.50	10	15.00
			-----		-----
			15.00		150.00

Total Task : 05) MRP 3.0 MONITORING PLANNING

Task Labor **9,727.50**
Task Expense **150.00**

Task : 06) ON-CALL SUPPORT

Class / Employee Name	Date	Hours	Rate	Amount
PROJECT ADMINISTRATOR				
DUONG, DAVID	07/05/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	07/22/2022	1.50	230.00	345.00
	07/25/2022	1.75	230.00	402.50
	07/27/2022	1.50	230.00	345.00
	07/28/2022	1.00	230.00	230.00
	07/29/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		6.50		1,495.00

PRINCIPAL				
PERKINS, RINTA	07/28/2022	0.50	280.00	140.00
SENIOR PRINCIPAL				
AUSTIN, LISA	07/05/2022	1.00	300.00	300.00
	07/18/2022	0.50	300.00	150.00
	07/21/2022	0.25	300.00	75.00
	07/22/2022	0.50	300.00	150.00
	07/25/2022	0.50	300.00	150.00
	07/27/2022	0.50	300.00	150.00
	07/28/2022	0.75	300.00	225.00
Total: SENIOR PRINCIPAL		4.00		1,200.00

Total Task : 06) ON-CALL SUPPORT

Task Labor **2,880.00**

Total Phase : 04) TASK 7 MONITORING SUPPORT AP

Phase Labor **12,607.50**
Phase Expense **150.00**

Total Project Labor **24,582.50**
Total Project Expense **150.00**

Total Project: CWR0649A -- ACCWP ON-CALL FY2022

24,732.50



**LARRY WALKER
ASSOCIATES**
science | policy | solutions

1480 Drew Avenue
Suite 100
Davis, CA 95618

530.753.6400
ar@lwa.com
lwa.com

September 26, 2022

Anita Franklin
Alameda Countywide Clean Water Program
and Water Conservation District
399 Elmhurst Street
Hayward, CA 94544

Re: Invoice #21

For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description		
436.14	ACCW - Municipal Regional Stormwater Permit Compliance Services	\$	53,644.60
	Invoice #21 Total	\$	53,644.60



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

September 14, 2022

Project No. - Invoice No: 00436.14-21

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 8/31/2022

Contract # 21344

Task: 06 MRP 3 & PCBs Implementation Support (POCs-22-1)

Consultants

<u>Payee</u>		<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant				
9/7/2022 Geosyntec Consultants	Inv. #483408	5,812.50	1.100	\$6,393.75
Total Consultants				\$6,393.75
Total This Task				\$6,393.75

Task: 07 Monitoring Support (MPC-22-1)

Consultants

<u>Payee</u>		<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant				
9/7/2022 Geosyntec Consultants	Inv. #483408	6,143.50	1.100	\$6,757.85
Total Consultants				\$6,757.85
Total This Task				\$6,757.85

Task: 09.1 NDS Baseline Support (NDS-22-1)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	9.00	315.00	\$2,835.00
McFadin, Sophie	2.75	126.00	\$346.50
VanCarpels, Tina	.50	135.00	\$67.50

Total Labor	\$3,249.00
Total This Task	\$3,249.00

Task: 09.2 C3TG Update (NDS-22-1)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	4.75	315.00	\$1,496.25
McFadin, Sophie	4.00	126.00	\$504.00
VanCarpels, Tina	1.50	135.00	\$202.50

Total Labor	\$2,202.75
Total This Task	\$2,202.75

Task: 10 GI SOP Development (MM-22-3)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Constantinescu, Alina	3.50	224.00	\$784.00
Fulton, Ryan	1.50	202.00	\$303.00
Mathews, Sandra	3.50	315.00	\$1,102.50
VanCarpels, Tina	.50	135.00	\$67.50

Total Labor	\$2,257.00
Total This Task	\$2,257.00

Task: 11 Annual Report Support (PRC-22-3)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	27.00	126.00	\$3,402.00
Mathews, Sandra	5.00	315.00	\$1,575.00
VanCarpels, Tina	2.00	135.00	\$270.00
Warren, Rachel	19.25	260.00	\$5,005.00

Total Labor	\$10,252.00
Total This Task	\$10,252.00

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	15.00	315.00	\$4,725.00
VanCarpels, Tina	1.00	135.00	\$135.00

Total Labor	\$4,860.00
Total This Task	\$4,860.00

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	12.00	315.00	\$3,780.00
VanCarpels, Tina	1.25	135.00	\$168.75
Total Labor			\$3,948.75
Total This Task			\$3,948.75

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	5.00	315.00	\$1,575.00
Total Labor			\$1,575.00
Total This Task			\$1,575.00

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Warren, Rachel	1.25	260.00	\$325.00
Total Labor			\$325.00
Total This Task			\$325.00

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	4.00	260.00	\$1,040.00
Total Labor			\$1,073.75
Total This Task			\$1,073.75

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Constantinescu, Alina	.25	224.00	\$56.00
Mathews, Sandra	.25	315.00	\$78.75
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	6.00	260.00	\$1,560.00
Total Labor			\$1,728.50
Total This Task			\$1,728.50

Task: 19.1 Grant Application Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mani, Amir	18.75	260.00	\$4,875.00
Mathews, Sandra	.75	315.00	\$236.25
VanCarpels, Tina	2.00	135.00	\$270.00
Yin, Elizabeth	14.00	260.00	\$3,640.00
Total Labor			\$9,021.25
Total This Task			\$9,021.25

Invoice Amount **\$53,644.60**

Billing Limits	Current	Prior	To-date
Total Billings	53,644.60	428,489.12	482,133.72
Limit			1,800,000.00
Remaining			1,317,866.28

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
CONSULTANT INVOICE #: 21
INVOICE DATE:

436.14
BILLING PERIOD: August 1 - 31, 2022
September 14, 2022

ACCW - Municipal Regional Stormwater Permit Compliance Services
Contract No. 21344
For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	-\$1,369.75
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	82,754.63	6,393.75	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	39,000.50	6,757.85	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	26,757.75	5,451.75	32,209.50	27,790.50
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	22,864.00	2,257.00	25,121.00	4,879.00
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	9,401.25	10,252.00	19,653.25	346.75
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	8,056.25	10,383.75	18,440.00	50,560.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	-	325.00	325.00	9,675.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	2,332.50	2,802.25	5,134.75	84,065.25
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	-	-	-	116,270.00
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	-	-	-	113,850.00
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	-	9,021.25	9,021.25	22,978.75
TOTALS					\$970,920.00	\$428,489.12	\$53,644.60	\$482,133.72	\$488,786.28



PLEASE REMIT PAYMENT TO:
Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
707 4TH STREET, SUITE 200
DAVIS, CA 95616

Project: [436.14](#)
[517](#)
 Task 6: \$ [5,812.50](#)
 Task 7: \$ [6,143.50](#)
 Total: \$ [11,956.00](#)

Invoice # : 483408
Project : CWR0649A
Invoice Date : 9/7/2022
Project Name : ACCWP ON-CALL FY2022

For Professional Services Rendered through transaction date: 8/31/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA AUSTIN AT (510) 285-2757

LWA PROJECT NO. 436.14 Task 6

Professional Services	\$11,860.00
Reimbursable Expenses	\$96.00
Current Invoice	----- \$11,956.00

****Amount Due This Invoice **** **\$11,956.00**

Statement

Prior Billings	\$122,726.25
Current Invoice	\$11,956.00
Billed To Date	\$134,682.25
Paid To Date	\$77,461.25

Statement

Project Budget	\$155,660.00
Expended to Date	\$134,682.25
Contract Balance	\$20,977.75
**Amount Due This Invoice **	\$11,956.00

Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

Task : 03) POC LOAD REDUCTION REPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	08/01/2022	1.25	150.00	187.50
	08/05/2022	0.50	150.00	75.00
	08/10/2022	0.75	150.00	112.50
	08/11/2022	1.00	150.00	150.00
Total: STAFF PROFESSIONAL		3.50		525.00
PROJECT PROFESSIONAL				
WELSH, LISA	08/01/2022	1.00	230.00	230.00
	08/02/2022	0.25	230.00	57.50
	08/05/2022	0.25	230.00	57.50
	08/26/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.75		402.50
SENIOR PRINCIPAL				
AUSTIN, LISA	08/10/2022	1.00	300.00	300.00
Total Task : 03) POC LOAD REDUCTION REPORT			Task Labor	1,227.50

Task : 04) WORKGROUP MEETINGS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	08/10/2022	1.25	150.00	187.50
PROJECT PROFESSIONAL				
WELSH, LISA	08/24/2022	2.75	230.00	632.50
	08/25/2022	2.25	230.00	517.50
Total: PROJECT PROFESSIONAL		5.00		1,150.00
SENIOR PRINCIPAL				
AUSTIN, LISA	08/08/2022	0.50	300.00	150.00
	08/09/2022	1.00	300.00	300.00
	08/10/2022	1.50	300.00	450.00
	08/15/2022	0.75	300.00	225.00
	08/23/2022	0.25	300.00	75.00
	08/25/2022	2.25	300.00	675.00
	08/30/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		6.50		1,950.00
Total Task : 04) WORKGROUP MEETINGS			Task Labor	3,287.50

Task : 06) COMPILE AC BUILDING MATERIAL D

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	08/18/2022	0.75	150.00	112.50
	08/19/2022	2.00	150.00	300.00
	08/20/2022	0.50	150.00	75.00
	08/22/2022	0.25	150.00	37.50
	08/23/2022	0.50	150.00	75.00
	08/30/2022	0.25	150.00	37.50

Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Total: STAFF PROFESSIONAL		4.25		637.50

PROJECT PROFESSIONAL

WELSH, LISA	08/01/2022	0.50	230.00	115.00
	08/10/2022	0.25	230.00	57.50
	08/23/2022	0.25	230.00	57.50
	08/26/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.50		345.00

Total Task : 06) COMPILE AC BUILDING MATERIAL D**Task Labor****982.50****Task : 07) ON-CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	08/04/2022	1.00	90.00	90.00
STAFF PROFESSIONAL				
YAO, GRACE	08/16/2022	0.75	150.00	112.50
	08/30/2022	0.75	150.00	112.50
Total: STAFF PROFESSIONAL		1.50		225.00

Total Task : 07) ON-CALL SUPPORT**Task Labor****315.00****Total Phase : 01) TASK 6 MRP3 & POCS IMPLEMENTATI****Phase Labor****5,812.50**

Phase : 04) TASK 7 MONITORING SUPPORT AP

Task : 03) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	08/25/2022	0.25	300.00	75.00

Total Task : 03) BAMSC MPC**Task Labor****75.00****Task : 05) MRP 3.0 MONITORING PLANNING**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	08/16/2022	1.00	150.00	150.00
	08/20/2022	3.00	150.00	450.00
	08/24/2022	5.00	150.00	750.00
	08/25/2022	3.50	150.00	525.00
	08/25/2022	0.25	150.00	37.50
	08/29/2022	0.75	150.00	112.50
	08/30/2022	1.50	150.00	225.00
Total: STAFF PROFESSIONAL		15.00		2,250.00

PROJECT PROFESSIONAL

WELSH, LISA	08/01/2022	1.50	230.00	345.00
	08/02/2022	0.50	230.00	115.00
	08/03/2022	1.50	230.00	345.00
	08/05/2022	0.50	230.00	115.00

Phase : 04) TASK 7 MONITORING SUPPORT AP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	08/22/2022	1.25	230.00	287.50
	08/23/2022	0.25	230.00	57.50
	08/29/2022	0.75	230.00	172.50
	08/30/2022	1.25	230.00	287.50
Total: PROJECT PROFESSIONAL		7.50		1,725.00

SENIOR PRINCIPAL				
AUSTIN, LISA	08/16/2022	1.00	300.00	300.00
	08/22/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		1.50		450.00

<u>Vendor / Employee Name</u>	<u>Doc Nbr</u>	<u>Date</u>	<u>Units</u>	<u>Rate</u>	<u>Amount</u>
GIS COMPUTER TIME					
YAO, GRACE	005646	08/16/2022	1.00	24	24.00
	005646	08/20/2022	3.00	24	72.00
			----- 4.00		----- 96.00

Total Task : 05) MRP 3.0 MONITORING PLANNING

Task Labor
Task Expense

4,425.00
96.00

Task : 06) ON-CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	08/03/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	08/02/2022	0.75	230.00	172.50
	08/03/2022	1.50	230.00	345.00
	08/04/2022	0.25	230.00	57.50
	08/05/2022	0.50	230.00	115.00
	08/10/2022	0.50	230.00	115.00
	08/21/2022	0.50	230.00	115.00
	08/22/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		4.25		977.50

SENIOR PRINCIPAL				
AUSTIN, LISA	08/03/2022	0.50	300.00	150.00
	08/05/2022	0.50	300.00	150.00
	08/07/2022	0.25	300.00	75.00
	08/11/2022	0.25	300.00	75.00
	08/12/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 06) ON-CALL SUPPORT

Task Labor

1,547.50

Total Phase : 04) TASK 7 MONITORING SUPPORT AP

Phase Labor
Phase Expense

6,047.50
96.00

Total Project Labor
Total Project Expense

11,860.00
96.00

Total Project: CWR0649A -- ACCWP ON-CALL FY2022

11,956.00

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

November 02, 2022

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #22
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$44,427.38
	Invoice #22 Total	\$44,427.38



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

October 12, 2022

Project No. - Invoice No: 00436.14-22

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 9/30/2022

Contract # 21344

Task: 09.1 NDS Baseline Support (NDS-22-1)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	16.25	315.00	\$5,118.75
VanCarpels, Tina	1.25	135.00	\$168.75
Total Labor			\$5,287.50
Total This Task			\$5,287.50

Task: 09.2 C3TG Update (NDS-22-1)

Professional Personnel

Employee	Hours	Rate	Amount
Constantinescu, Alina	6.25	224.00	\$1,400.00
Mathews, Sandra	19.50	315.00	\$6,142.50
McFadin, Sophie	23.75	126.00	\$2,992.50
VanCarpels, Tina	2.75	135.00	\$371.25
Total Labor			\$10,906.25
Total This Task			\$10,906.25

Task: 10 GI SOP Development (MM-22-3)

Professional Personnel

Employee	Hours	Rate	Amount
Fulton, Ryan	1.00	202.00	\$202.00

Mathews, Sandra	.25	315.00	\$78.75
Total Labor			\$280.75
Total This Task			\$280.75

Task: 11 Annual Report Support (PRC-22-3)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	5.00	126.00	\$630.00
Warren, Rachel	1.50	260.00	\$390.00
Total Labor			\$1,020.00
Total This Task			\$1,020.00

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	10.00	315.00	\$3,150.00
VanCarpels, Tina	.75	135.00	\$101.25
Total Labor			\$3,251.25
Total This Task			\$3,251.25

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	11.25	315.00	\$3,543.75
VanCarpels, Tina	.75	135.00	\$101.25
Total Labor			\$3,645.00
Total This Task			\$3,645.00

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	4.75	315.00	\$1,496.25
VanCarpels, Tina	.25	135.00	\$33.75
Total Labor			\$1,530.00
Total This Task			\$1,530.00

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	2.50	260.00	\$650.00
Total Labor			\$650.00
Total This Task			\$650.00

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Constantinescu, Alina	8.00	224.00	\$1,792.00
Mathews, Sandra	.50	315.00	\$157.50
VanCarpels, Tina	2.25	135.00	\$303.75
Yin, Elizabeth	26.50	260.00	\$6,890.00
Total Labor			\$9,143.25

Reimbursable Expenses

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
9/30/2022 First Northern Bank Panera Bread Catering	218.63		\$218.63
Total Reimbursables			\$218.63
Total This Task			\$9,361.88

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant 10/6/2022 Geosyntec Consultants Inv. #486749	5,710.00	1.100	\$6,281.00
Total Consultants			\$6,281.00
Total This Task			\$6,281.00

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant 10/6/2022 Geosyntec Consultants Inv. #486749	420.00	1.100	\$462.00
Total Consultants			\$462.00
Total This Task			\$462.00

Task: 19.1 Grant Application Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	2.75	315.00	\$866.25
Total Labor			\$866.25

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant 10/6/2022 Geosyntec Consultants Inv. #486749	805.00	1.100	\$885.50
Total Consultants			\$885.50

Total This Task

\$1,751.75

Invoice Amount

\$44,427.38

Billing Limits

Current

Prior

To-date

Total Billings

44,427.38

482,133.72

526,561.10

Limit

1,800,000.00

Remaining

1,273,438.90

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
 CONSULTANT INVOICE #: 22
 INVOICE DATE:

436.14
 BILLING PERIOD: September 1 - 30, 2022
 October 12, 2022

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	82,754.63	-	82,754.63	16,245.37
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	39,000.50	-	39,000.50	6,999.50
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	26,757.75	16,193.75	42,951.50	17,048.50
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	22,864.00	280.75	23,144.75	6,855.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	9,401.25	1,020.00	10,421.25	9,578.75
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	8,056.25	8,426.25	16,482.50	52,517.50
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	-	-	-	10,000.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	2,332.50	10,011.88	12,344.38	76,855.62
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	-	6,281.00	6,281.00	109,989.00
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	-	462.00	462.00	113,388.00
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	-	1,751.75	1,751.75	30,248.25
TOTALS					\$970,920.00	\$428,489.12	\$44,427.38	\$472,916.50	\$498,003.50

From: Panera Bread <do-not-reply@panerabread.com>
Sent: Thursday, September 22, 2022 7:46 AM
To: Operations
Subject: Final Order Confirmation: #19854268

PROJECT 436.14 T16.2
EXP 753.00
DATE 9/22/2022
AMT\$218.63
Approved S. Mathews



Thanks for your order!

Order number:
19854268

Business:
Catering

Expected Delivery Time:
09/22/2022 07:45 AM

Order Started:
09/20/2022 02:31 PM

Order Received/Modified:
09/22/2022 07:45 AM

To make changes to your order, please call (510)732-0279

Customer Information

Name: Larry Walker Associates
Phone Number: 5307536400

Email Address: operations@lwa.com

Company: Alameda County Public Works

Order Details

Order Type: Delivery
Delivery Address: 951 Turner Court
Hayward, CA 94545

No. of People: 25

Delivery Instructions: Lori Pettegrew 5107109970

Order Summary

3 100 Colombian Dark Roast Coffee Tote	65.97
1 Decaf Coffee Tote	21.99
3 Bagels Morning Pastries	108.87
3 Plain Bagel	
3 Asiago Bagel	
3 Everything Bagel	
3 Cinnamon Crunch Bagel	
3 Bear Claw	
3 Pecan Braid	
3 Chocolate Croissant	
3 Vanilla Cinnamon Roll	
3 Orange Scone	
3 Blueberry Muffin	
12 Plain Cream Cheese	

Included in your order: Napkins, utensils, plates for 25 people.

Subtotal	\$ 196.83
Tax	\$ 2.12
*Delivery Charge	\$ 19.68

Total \$ 218.63

Please consume, or refrigerate promptly

*Our curbside fee and delivery charge is not a tip or gratuity provided to the driver. Please consider tipping your driver and cafe staff in appreciation of great service.

Payment Information

Type	Amnt.
Visa 5859	\$ 218.63

MyPanera Rewards

MyPanera Number: 623362807421

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



436.14
 Task 17: \$ 5,710.00
 Task 18: \$ 420.00
 Task 19.1: \$ 805.00
 Total: \$ 6,935.00

PLEASE REMIT PAYMENT TO:
Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
707 FOURTH STREET
SUITE 200
DAVIS, CA 95616
Attention: SANDY MATHEWS

Invoice # : 486749
Project : CWR0649B
Invoice Date : 10/6/2022
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 9/30/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$6,935.00
Current Invoice	----- \$6,935.00

****Amount Due This Invoice **** **\$6,935.00**

Statement

Prior Billings	\$0.00
Current Invoice	\$6,935.00
Billed To Date	\$6,935.00
Paid To Date	\$0.00

Statement

Project Budget	\$216,200.00
Expended to Date	\$6,935.00
Contract Balance	\$209,265.00
**Amount Due This Invoice **	\$6,935.00

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/21/2022	0.75	230.00	172.50
Total Task : 01) ACCWP MPC			Task Labor	172.50

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/07/2022	1.00	230.00	230.00
SENIOR PRINCIPAL				
AUSTIN, LISA	09/06/2022	0.25	300.00	75.00
	09/07/2022	2.50	300.00	750.00
Total: SENIOR PRINCIPAL		2.75		825.00
Total Task : 02) BAMSC MPC			Task Labor	1,055.00

Task : 03) RMP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/21/2022	0.25	230.00	57.50
Total Task : 03) RMP			Task Labor	57.50

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	09/16/2022	0.25	150.00	37.50
PROJECT PROFESSIONAL				
WELSH, LISA	09/01/2022	0.50	230.00	115.00
	09/06/2022	0.25	230.00	57.50
	09/09/2022	0.25	230.00	57.50
	09/16/2022	0.25	230.00	57.50
	09/19/2022	0.25	230.00	57.50
	09/20/2022	0.25	230.00	57.50
	09/22/2022	0.25	230.00	57.50
	09/23/2022	0.50	230.00	115.00
	09/26/2022	0.50	230.00	115.00
	09/27/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.25		747.50
SENIOR PRINCIPAL				
AUSTIN, LISA	09/16/2022	0.25	300.00	75.00
	09/22/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		0.75		225.00
Total Task : 05) TRASH MONITORING PLAN			Task Labor	1,010.00

Task : 06) LID MONITORING PLAN

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	09/16/2022	0.25	150.00	37.50
PROJECT PROFESSIONAL				
WELSH, LISA	09/01/2022	0.25	230.00	57.50
	09/15/2022	0.50	230.00	115.00
	09/16/2022	0.50	230.00	115.00
	09/19/2022	0.75	230.00	172.50
	09/20/2022	1.25	230.00	287.50
	09/22/2022	0.50	230.00	115.00
	09/23/2022	0.25	230.00	57.50
	09/28/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		4.25		977.50
SENIOR PRINCIPAL				
AUSTIN, LISA	09/15/2022	0.25	300.00	75.00
	09/16/2022	0.25	300.00	75.00
	09/22/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		0.75		225.00

Total Task : 06) LID MONITORING PLAN

Task Labor

1,240.00

Task : 07) POC MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/08/2022	0.75	230.00	172.50
	09/16/2022	0.75	230.00	172.50
	09/18/2022	0.75	230.00	172.50
	09/22/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		2.75		632.50

Total Task : 07) POC MONITORING SUPPORT

Task Labor

632.50

Task : 08) POCS RWL PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/22/2022	0.50	230.00	115.00
	09/28/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		1.25		287.50
SENIOR PRINCIPAL				
AUSTIN, LISA	09/19/2022	0.25	300.00	75.00
	09/22/2022	0.25	300.00	75.00
	09/28/2022	1.25	300.00	375.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 08) POCS RWL PLAN

Task Labor

812.50

Task : 09) ON CALL SUPPORT

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	09/07/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	09/07/2022	1.50	230.00	345.00
	09/08/2022	0.25	230.00	57.50
	09/16/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		2.00		460.00
SENIOR PRINCIPAL				
AUSTIN, LISA	09/07/2022	0.25	300.00	75.00
	09/29/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		0.75		225.00

Total Task : 09) ON CALL SUPPORT

Task Labor

730.00

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

5,710.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/23/2022	0.50	230.00	115.00
	09/27/2022	1.00	230.00	230.00
Total: PROJECT PROFESSIONAL		1.50		345.00

SENIOR PRINCIPAL

AUSTIN, LISA	09/08/2022	0.25	300.00	75.00
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Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

420.00

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

420.00

Phase : 03) TASK 19 REGIONAL PROJECT SUPPOR

Task : 01) GRANT PROJECT SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	09/06/2022	1.00	230.00	230.00
	09/07/2022	0.25	230.00	57.50
	09/08/2022	1.50	230.00	345.00
	09/09/2022	0.25	230.00	57.50
	09/12/2022	0.25	230.00	57.50
	09/19/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.50		805.00

Total Task : 01) GRANT PROJECT SUPPORT

Task Labor

805.00

Total Phase : 03) TASK 19 REGIONAL PROJECT SUPPOR

Phase Labor

805.00

Total Project Labor

6,935.00

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

6,935.00

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

November 18, 2022

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #22
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$42,352.26
	Invoice #23 Total	\$42,352.26



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

November 15, 2022
Project No. - Invoice No: 00436.14-23

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 10/31/2022

Contract # 21344

Task: 09.1 NDS Baseline Support (NDS-22-1)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	5.00	224.00	\$1,120.00
Mathews, Sandra	14.00	315.00	\$4,410.00
VanCarpels, Tina	1.25	135.00	\$168.75
Total Labor			\$5,698.75
Total This Task			\$5,698.75

Task: 09.2 C3TG Update (NDS-22-1)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	7.25	224.00	\$1,624.00
Constantinescu, Alina	1.50	224.00	\$336.00
Mathews, Sandra	7.75	315.00	\$2,441.25
McFadin, Sophie	15.50	126.00	\$1,953.00
VanCarpels, Tina	1.50	135.00	\$202.50
Total Labor			\$6,556.75
Total This Task			\$6,556.75

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Bardsley, Audra	8.75	224.00	\$1,960.00
Mathews, Sandra	9.50	315.00	\$2,992.50
VanCarpels, Tina	.75	135.00	\$101.25
Total Labor			\$5,053.75
Total This Task			\$5,053.75

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Bardsley, Audra	5.50	224.00	\$1,232.00
Mathews, Sandra	5.75	315.00	\$1,811.25
VanCarpels, Tina	.75	135.00	\$101.25
Total Labor			\$3,144.50
Total This Task			\$3,144.50

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	6.00	315.00	\$1,890.00
VanCarpels, Tina	.50	135.00	\$67.50
Total Labor			\$1,957.50
Total This Task			\$1,957.50

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	.50	315.00	\$157.50
Warren, Rachel	2.00	260.00	\$520.00
Total Labor			\$677.50
Total This Task			\$677.50

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	3.50	260.00	\$910.00
Total Labor			\$910.00
Total This Task			\$910.00

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	4.00	260.00	\$1,040.00
Total Labor			\$1,073.75
Total This Task			\$1,073.75

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
11/8/2022 Geosyntec Consultants Inv. #490525	11,876.25	1.100	\$13,063.88
Total Consultants			\$13,063.88
Total This Task			\$13,063.88

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
11/8/2022 Geosyntec Consultants Inv. #490525	3,546.25	1.100	\$3,900.88
Total Consultants			\$3,900.88
Total This Task			\$3,900.88

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	1.00	315.00	\$315.00
Total Labor			\$315.00
Total This Task			\$315.00

Invoice Amount **\$42,352.26**

Billing Limits	Current	Prior	To-date
Total Billings	42,352.26	526,561.10	568,913.36
Limit			1,800,000.00
Remaining			1,231,086.64

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 22 BILLING PERIOD: October 1 - 31, 2022
 INVOICE DATE: November 15, 2022

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	48,403.25	12,255.50	60,658.75	(658.75)
GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	26,866.25	10,155.75	37,022.00	31,978.00
2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	325.00	677.50	1,002.50	8,997.50
Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	15,146.63	1,983.75	17,130.38	72,069.62
Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	6,281.00	13,063.88	19,344.88	96,925.12
C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	462.00	3,900.88	4,362.88	109,487.12
Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	10,773.00	315.00	11,088.00	20,912.00
				\$970,920.00	\$526,561.10	\$42,352.26	\$568,913.36	\$402,006.64



436.14
Task 17 \$11,876.25
Task 18 \$3,546.25
SM - 11/8/2022

PLEASE REMIT PAYMENT TO:
Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 490525
Project : CWR0649B
Invoice Date : 11/8/2022
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 10/31/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$15,422.50
Current Invoice	----- \$15,422.50

****Amount Due This Invoice **** **\$15,422.50**

Statement

Prior Billings	\$6,935.00
Current Invoice	\$15,422.50
Billed To Date	\$22,357.50
Paid To Date	\$0.00

Statement

Project Budget	\$216,200.00
Expended to Date	\$22,357.50
Contract Balance	\$193,842.50
**Amount Due This Invoice **	\$15,422.50

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/07/2022	0.50	230.00	115.00
	10/11/2022	0.25	230.00	57.50
	10/12/2022	0.50	230.00	115.00
	10/17/2022	1.75	230.00	402.50
	10/18/2022	3.00	230.00	690.00
	10/19/2022	1.50	230.00	345.00
Total: PROJECT PROFESSIONAL		7.50		1,725.00

SENIOR PRINCIPAL

AUSTIN, LISA	10/12/2022	0.25	300.00	75.00
	10/18/2022	2.25	300.00	675.00
	10/20/2022	0.50	300.00	150.00
	10/24/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		3.25		975.00

Total Task : 01) ACCWP MPC

Task Labor

2,700.00**Task : 03) RMP**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/03/2022	2.75	230.00	632.50
	10/13/2022	0.25	230.00	57.50
	10/19/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.25		747.50

SENIOR PROFESSIONAL

HAVENS, KELLY	10/12/2022	0.25	255.00	63.75
	10/20/2022	1.50	255.00	382.50
Total: SENIOR PROFESSIONAL		1.75		446.25

SENIOR PRINCIPAL

AUSTIN, LISA	10/13/2022	1.00	300.00	300.00
	10/27/2022	0.75	300.00	225.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 03) RMP

Task Labor

1,718.75**Task : 05) TRASH MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/07/2022	0.25	230.00	57.50
	10/10/2022	0.25	230.00	57.50
	10/21/2022	0.25	230.00	57.50
	10/27/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.25		287.50

SENIOR PRINCIPAL

AUSTIN, LISA	10/05/2022	0.50	300.00	150.00
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Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	10/24/2022	0.25	300.00	75.00
	10/27/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.00		300.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

587.50

Task : 06) LID MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/19/2022	0.25	150.00	37.50
	10/21/2022	5.00	150.00	750.00
	10/22/2022	1.50	150.00	225.00
	10/26/2022	1.25	150.00	187.50
Total: STAFF PROFESSIONAL		8.00		1,200.00

PROJECT PROFESSIONAL

WELSH, LISA	10/07/2022	0.25	230.00	57.50
	10/10/2022	0.25	230.00	57.50
	10/11/2022	0.50	230.00	115.00
	10/17/2022	0.25	230.00	57.50
	10/18/2022	0.75	230.00	172.50
	10/19/2022	0.50	230.00	115.00
	10/20/2022	0.25	230.00	57.50
	10/21/2022	4.75	230.00	1,092.50
	10/27/2022	1.25	230.00	287.50
	10/28/2022	0.50	230.00	115.00
	10/31/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		9.75		2,242.50

SENIOR PRINCIPAL

AUSTIN, LISA	10/05/2022	0.50	300.00	150.00
	10/12/2022	0.50	300.00	150.00
	10/19/2022	0.25	300.00	75.00
	10/27/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 06) LID MONITORING PLAN

Task Labor

3,967.50

Task : 07) POC MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/27/2022	0.25	230.00	57.50

Total Task : 07) POC MONITORING SUPPORT

Task Labor

57.50

Task : 08) POCS RWL PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/08/2022	1.00	150.00	150.00
	10/10/2022	4.00	150.00	600.00
Total: STAFF PROFESSIONAL		5.00		750.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/10/2022	0.25	230.00	57.50
	10/11/2022	1.25	230.00	287.50
	10/12/2022	0.75	230.00	172.50
	10/19/2022	0.25	230.00	57.50
	10/20/2022	1.00	230.00	230.00
	10/27/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.75		862.50
SENIOR PRINCIPAL				
AUSTIN, LISA	10/12/2022	1.50	300.00	450.00
	10/19/2022	0.25	300.00	75.00
	10/20/2022	0.50	300.00	150.00
	10/27/2022	0.25	300.00	75.00
	10/28/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		2.75		825.00

Total Task : 08) POCS RWL PLAN

Task Labor

2,437.50

Task : 09) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	10/06/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/05/2022	0.50	230.00	115.00
	10/07/2022	0.50	230.00	115.00
	10/22/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.25		287.50
SENIOR PRINCIPAL				
AUSTIN, LISA	10/27/2022	0.25	300.00	75.00

Total Task : 09) ON CALL SUPPORT

Task Labor

407.50

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

11,876.25

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/04/2022	0.75	150.00	112.50
	10/12/2022	0.75	150.00	112.50
	10/13/2022	0.25	150.00	37.50
	10/14/2022	0.25	150.00	37.50
	10/28/2022	1.00	150.00	150.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/31/2022	1.00	150.00	150.00
Total: STAFF PROFESSIONAL		4.00		600.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/04/2022	0.75	230.00	172.50
	10/06/2022	0.25	230.00	57.50
	10/12/2022	0.50	230.00	115.00
	10/13/2022	0.25	230.00	57.50
	10/20/2022	0.25	230.00	57.50
	10/28/2022	0.75	230.00	172.50
	10/31/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		3.50		805.00
SENIOR PROFESSIONAL				
HAVENS, KELLY	10/04/2022	0.25	255.00	63.75
PRINCIPAL				
PERKINS, RINTA	10/04/2022	0.25	280.00	70.00
SENIOR PRINCIPAL				
AUSTIN, LISA	10/04/2022	0.25	300.00	75.00
	10/05/2022	1.75	300.00	525.00
	10/17/2022	2.00	300.00	600.00
	10/21/2022	0.75	300.00	225.00
	10/28/2022	1.25	300.00	375.00
	10/31/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		6.50		1,950.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

3,488.75

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/22/2022	0.25	230.00	57.50

Total Task : 06) ON CALL SUPPORT

Task Labor

57.50

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

3,546.25

Total Project Labor

15,422.50

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

15,422.50

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

December 15, 2022

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #24
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$51,856.70
	Invoice #24 Total	\$51,856.70



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

December 14, 2022
Project No. - Invoice No: 00436.14-24

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 11/30/2022

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	7.75	224.00	\$1,736.00
Mathews, Sandra	11.50	315.00	\$3,622.50
VanCarpels, Tina	1.00	135.00	\$135.00
Total Labor			\$5,493.50
Total This Task			\$5,493.50

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	23.00	315.00	\$7,245.00
VanCarpels, Tina	1.00	135.00	\$135.00
Total Labor			\$7,380.00
Total This Task			\$7,380.00

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	3.00	315.00	\$945.00
Total Labor			\$945.00

Total This Task \$945.00

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	3.25	126.00	\$409.50
Mathews, Sandra	2.25	315.00	\$708.75
VanCarpels, Tina	.75	135.00	\$101.25
Warren, Rachel	7.50	260.00	\$1,950.00

Total Labor \$3,169.50

Total This Task \$3,169.50

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	4.50	260.00	\$1,170.00

Total Labor \$1,203.75

Total This Task \$1,203.75

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.50	135.00	\$67.50
Yin, Elizabeth	10.00	260.00	\$2,600.00

Total Labor \$2,667.50

Total This Task \$2,667.50

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
12/7/2022 Geosyntec Consultants Inv. #493765	8,392.50	1.100	\$9,231.75

Total Consultants \$9,231.75

Total This Task \$9,231.75

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
12/7/2022 Geosyntec Consultants Inv. #493765	7,004.50	1.100	\$7,704.95

Total Consultants \$7,704.95

Total This Task \$7,704.95

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	3.75	315.00	\$1,181.25
VanCarpels, Tina	.25	135.00	\$33.75
Total Labor			\$1,215.00
Total This Task			\$1,215.00

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	4.50	315.00	\$1,417.50
VanCarpels, Tina	.25	135.00	\$33.75
Total Labor			\$1,451.25
Total This Task			\$1,451.25

Task: 20.4 C3TG Update/Technical Materials

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Bardsley, Audra	8.75	224.00	\$1,960.00
Constantinescu, Alina	4.25	224.00	\$952.00
Mathews, Sandra	14.75	315.00	\$4,646.25
McFadin, Sophie	27.50	126.00	\$3,465.00
VanCarpels, Tina	2.75	135.00	\$371.25
Total Labor			\$11,394.50
Total This Task			\$11,394.50

Invoice Amount **\$51,856.70**

Billing Limits	Current	Prior	To-date
Total Billings	51,856.70	568,913.36	620,770.06
Limit			1,800,000.00
Remaining			1,179,229.94

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 24 BILLING PERIOD: November 1 - 30, 2022
 INVOICE DATE: November 15, 2022

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	48,403.25	-	48,403.25	11,596.75
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	26,866.25	13,818.50	40,684.75	28,315.25
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	325.00	3,169.50	3,494.50	6,505.50
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	15,146.63	3,871.25	19,017.88	70,182.12
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	6,281.00	9,231.75	15,512.75	100,757.25
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	462.00	7,704.95	8,166.95	105,683.05
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	10,773.00	1,215.00	11,988.00	20,012.00
NDS-23-1	Regional Project Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	-	12,845.75	12,845.75	49,154.25
TOTALS					\$1,032,920.00	\$526,561.10	\$51,856.70	\$578,417.80	\$454,502.20



Project 436.14
 517
 Task 17 \$8392.50
 Task 18 \$7,004.50
 Total \$15,397.00

PLEASE REMIT PAYMENT TO:
 Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 493765
Project : CWR0649B
Invoice Date : 12/7/2022
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 11/30/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$15,325.00
Reimbursable Expenses	\$72.00
Current Invoice	\$15,397.00

****Amount Due This Invoice **** **\$15,397.00**

Statement

Prior Billings \$22,357.50
 Current Invoice \$15,397.00
 Billed To Date \$37,754.50
 Paid To Date \$0.00

Statement

Project Budget \$216,200.00
 Expended to Date \$37,754.50
 Contract Balance \$178,445.50
****Amount Due This Invoice **** **\$15,397.00**

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/04/2022	0.50	230.00	115.00
	11/07/2022	0.50	230.00	115.00
	11/21/2022	0.25	230.00	57.50
	11/30/2022	0.25	230.00	57.50
	11/30/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		2.00		460.00

Total Task : 01) ACCWP MPC

Task Labor

460.00

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/02/2022	2.00	230.00	460.00
SENIOR PRINCIPAL				
AUSTIN, LISA	11/02/2022	2.25	300.00	675.00

Total Task : 02) BAMSC MPC

Task Labor

1,135.00

Task : 04) UCMR SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/30/2022	0.25	230.00	57.50

Total Task : 04) UCMR SUPPORT

Task Labor

57.50

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	11/14/2022	0.50	150.00	75.00
	11/16/2022	0.50	150.00	75.00
	11/18/2022	0.25	150.00	37.50
Total: STAFF PROFESSIONAL		1.25		187.50

SENIOR STAFF PROFESSIONAL

HWANG, SAMUEL	11/16/2022	0.50	175.00	87.50
	11/21/2022	3.00	175.00	525.00
	11/23/2022	7.00	175.00	1,225.00
	11/30/2022	1.50	175.00	262.50
Total: SENIOR STAFF PROFESSIONAL		12.00		2,100.00

PROJECT PROFESSIONAL

WELSH, LISA	11/14/2022	0.50	230.00	115.00
	11/16/2022	1.25	230.00	287.50
	11/17/2022	0.25	230.00	57.50
	11/18/2022	0.75	230.00	172.50
	11/21/2022	0.25	230.00	57.50
	11/29/2022	0.50	230.00	115.00

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Total: PROJECT PROFESSIONAL		3.50		805.00

SENIOR PRINCIPAL

AUSTIN, LISA	11/11/2022	0.25	300.00	75.00
	11/14/2022	0.75	300.00	225.00
	11/15/2022	0.25	300.00	75.00
	11/18/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.50		450.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

3,542.50**Task : 06) LID MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	11/22/2022	1.25	150.00	187.50
	11/23/2022	0.50	150.00	75.00
Total: STAFF PROFESSIONAL		1.75		262.50

PROJECT PROFESSIONAL

WELSH, LISA	11/01/2022	0.25	230.00	57.50
	11/02/2022	0.25	230.00	57.50
	11/03/2022	0.25	230.00	57.50
	11/04/2022	0.25	230.00	57.50
	11/07/2022	0.25	230.00	57.50
	11/11/2022	0.50	230.00	115.00
	11/16/2022	0.25	230.00	57.50
	11/17/2022	0.25	230.00	57.50
	11/18/2022	0.25	230.00	57.50
	11/21/2022	1.25	230.00	287.50
	11/22/2022	0.75	230.00	172.50
	11/23/2022	0.50	230.00	115.00
	11/29/2022	0.50	230.00	115.00
	11/30/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		5.75		1,322.50

SENIOR PRINCIPAL

AUSTIN, LISA	11/09/2022	0.25	300.00	75.00
	11/11/2022	0.25	300.00	75.00
	11/11/2022	0.25	300.00	75.00
	11/18/2022	0.25	300.00	75.00
	11/21/2022	1.00	300.00	300.00
Total: SENIOR PRINCIPAL		2.00		600.00

Total Task : 06) LID MONITORING PLAN

Task Labor

2,185.00**Task : 08) POCS RWL PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/09/2022	0.75	230.00	172.50
	11/14/2022	0.25	230.00	57.50

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/21/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		1.75		402.50

SENIOR PRINCIPAL

AUSTIN, LISA	11/09/2022	0.75	300.00	225.00
	11/14/2022	0.25	300.00	75.00
	11/21/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		1.50		450.00

Total Task : 08) POCS RWL PLAN

Task Labor

852.50**Task : 09) ON CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	11/08/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	11/08/2022	0.50	230.00	115.00

Total Task : 09) ON CALL SUPPORT

Task Labor

160.00**Total Phase : 01) TASK 17 MONITORING SUPPORT**

Phase Labor

8,392.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	11/04/2022	0.75	150.00	112.50
	11/07/2022	0.50	150.00	75.00
	11/09/2022	1.00	150.00	150.00
	11/10/2022	1.00	150.00	150.00
	11/11/2022	0.25	150.00	37.50
	11/17/2022	0.25	150.00	37.50
	11/18/2022	0.25	150.00	37.50
Total: STAFF PROFESSIONAL		4.00		600.00

SENIOR STAFF PROFESSIONAL

GALLO, ELIZABETH	11/04/2022	0.75	175.00	131.25
	11/15/2022	0.50	175.00	87.50
	11/17/2022	0.75	175.00	131.25
	11/18/2022	2.00	175.00	350.00
	11/21/2022	1.50	175.00	262.50
	11/23/2022	1.00	175.00	175.00
	11/28/2022	1.50	175.00	262.50
	11/29/2022	3.25	175.00	568.75
	11/30/2022	2.00	175.00	350.00
HWANG, SAMUEL	11/22/2022	0.25	175.00	43.75
	11/30/2022	1.50	175.00	262.50
Total: SENIOR STAFF PROFESSIONAL		15.00		2,625.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/03/2022	0.25	230.00	57.50
	11/04/2022	0.75	230.00	172.50
	11/06/2022	0.25	230.00	57.50
	11/07/2022	0.75	230.00	172.50
	11/08/2022	1.50	230.00	345.00
	11/09/2022	0.50	230.00	115.00
	11/10/2022	1.00	230.00	230.00
	11/11/2022	0.25	230.00	57.50
	11/14/2022	0.25	230.00	57.50
	11/16/2022	1.00	230.00	230.00
	11/18/2022	0.50	230.00	115.00
	11/22/2022	0.50	230.00	115.00
	11/28/2022	0.25	230.00	57.50
	11/29/2022	0.25	230.00	57.50
	11/30/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		8.75		2,012.50

SENIOR PRINCIPAL				
AUSTIN, LISA	11/03/2022	0.25	300.00	75.00
	11/04/2022	0.50	300.00	150.00
	11/07/2022	0.50	300.00	150.00
	11/08/2022	0.50	300.00	150.00
	11/10/2022	1.50	300.00	450.00
	11/15/2022	0.25	300.00	75.00
	11/17/2022	0.50	300.00	150.00
	11/18/2022	0.25	300.00	75.00
	11/22/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		4.50		1,350.00

<u>Vendor / Employee Name</u>	<u>Doc Nbr</u>	<u>Date</u>	<u>Units</u>	<u>Rate</u>	<u>Amount</u>
GIS COMPUTER TIME					
GALLO, ELIZABETH	005470	11/21/2022	1.50	24	36.00
	005470	11/23/2022	1.00	24	24.00
			----- 2.50		----- 60.00
YAO, GRACE	005646	11/17/2022	0.25	24	6.00
	005646	11/18/2022	0.25	24	6.00
			----- 0.50		----- 12.00
Total: Billable Unit Pricing					72.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor 6,587.50
Task Expense 72.00

Task : 04) AGOL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/10/2022	0.25	230.00	57.50
	11/13/2022	0.50	230.00	115.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/14/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.00		230.00

Total Task : 04) AGOL SUPPORT Task Labor 230.00

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	11/08/2022	0.50	230.00	115.00

Total Task : 06) ON CALL SUPPORT Task Labor 115.00

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP Phase Labor 6,932.50 Phase Expense 72.00

Total Project Labor 15,325.00 Total Project Expense 72.00

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023 15,397.00

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

January 19, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #25
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$47,609.48
	Invoice #25 Total	\$47,609.48



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

January 12, 2023

Project No. - Invoice No: 00436.14-25

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 12/31/2022

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	4.50	224.00	\$1,008.00
Mathews, Sandra	14.25	315.00	\$4,488.75
VanCarpels, Tina	1.00	135.00	\$135.00
Total Labor			\$5,631.75
Total This Task			\$5,631.75

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Celniker, Chloe	1.25	126.00	\$157.50
Mathews, Sandra	4.50	315.00	\$1,417.50
Total Labor			\$1,575.00
Total This Task			\$1,575.00

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	3.25	315.00	\$1,023.75
Total Labor			\$1,023.75

Total This Task \$1,023.75

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	6.50	126.00	\$819.00
Total Labor			<u>\$819.00</u>
Total This Task			<u>\$819.00</u>

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	2.00	260.00	\$520.00
Total Labor			<u>\$520.00</u>
Total This Task			<u>\$520.00</u>

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.50	135.00	\$67.50
Yin, Elizabeth	7.50	260.00	\$1,950.00
Total Labor			<u>\$2,017.50</u>
Total This Task			<u>\$2,017.50</u>

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Trouchon, Michael	.50	288.00	\$144.00
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	3.50	260.00	\$910.00
Total Labor			<u>\$1,087.75</u>
Total This Task			<u>\$1,087.75</u>

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
1/5/2023 Geosyntec Consultants	Inv. #496671	6,292.50	1.100
			\$6,921.75
Total Consultants			<u>\$6,921.75</u>
Total This Task			<u>\$6,921.75</u>

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>		Cost	Markup	Amount
Environmental Consultant				
1/5/2023 Geosyntec Consultants	Inv. #496671	13,419.75	1.100	\$14,761.73
Total Consultants				\$14,761.73
Total This Task				\$14,761.73

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	Hours	Rate	Amount
Indiresan, Shruti	9.75	160.00	\$1,560.00
Mathews, Sandra	3.00	315.00	\$945.00
VanCarpels, Tina	.50	135.00	\$67.50
Total Labor			\$2,572.50

Consultants

<u>Payee</u>		Cost	Markup	Amount
Environmental Consultant				
1/5/2023 Geosyntec Consultants	Inv. #496671	57.50	1.100	\$63.25
Total Consultants				\$63.25
Total This Task				\$2,635.75

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>	Hours	Rate	Amount
Mathews, Sandra	4.25	315.00	\$1,338.75
Total Labor			\$1,338.75
Total This Task			\$1,338.75

Task: 20.3 Trainings

Professional Personnel

<u>Employee</u>	Hours	Rate	Amount
Mathews, Sandra	.50	315.00	\$157.50
Total Labor			\$157.50
Total This Task			\$157.50

Task: 20.4 C3TG Update/Technical Materials

Professional Personnel

<u>Employee</u>	Hours	Rate	Amount
Constantinescu, Alina	9.00	224.00	\$2,016.00
Mathews, Sandra	20.75	315.00	\$6,536.25
McFadin, Sophie	4.50	126.00	\$567.00

Total Labor

\$9,119.25

Total This Task

\$9,119.25

Invoice Amount

\$47,609.48

Billing Limits

Current

Prior

To-date

Total Billings

47,609.48

620,770.06

668,379.54

Limit

1,800,000.00

Remaining

1,131,620.46

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 25 BILLING PERIOD: December 1 - 31, 2022
 INVOICE DATE: January 12, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	50,840.50	8,230.50	59,071.00	9,929.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	4,172.00	819.00	4,991.00	5,009.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	21,001.63	3,625.25	24,626.88	64,573.12
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	28,576.63	6,921.75	35,498.38	80,771.62
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	12,067.83	14,761.73	26,829.56	87,020.44
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	12,303.00	2,635.75	14,938.75	17,061.25
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	12,845.75	10,615.50	23,461.25	38,538.75
TOTALS					\$1,032,920.00	\$620,770.06	\$47,609.48	\$668,379.54	\$364,540.46



Task 17 \$11,876.25
Task 18 \$3,546.25

PLEASE REMIT PAYMENT TO:
Geosyntec Consultants, Inc.
900 Broken Sound Parkway NW, Suite 200
Boca Raton, Florida 33487-3575 USA
Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 490525
Project : CWR0649B
Invoice Date : 11/8/2022
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 10/31/2022

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
TASK ID NO. POC-IMP-23-1
TASK ID NO. MPC-23-2

Professional Services \$15,422.50
Current Invoice -----
\$15,422.50

****Amount Due This Invoice **** **\$15,422.50**

Statement

Prior Billings \$6,935.00
Current Invoice \$15,422.50
Billed To Date \$22,357.50
Paid To Date \$0.00

Statement

Project Budget \$216,200.00
Expended to Date \$22,357.50
Contract Balance \$193,842.50
****Amount Due This Invoice **** **\$15,422.50**

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/07/2022	0.50	230.00	115.00
	10/11/2022	0.25	230.00	57.50
	10/12/2022	0.50	230.00	115.00
	10/17/2022	1.75	230.00	402.50
	10/18/2022	3.00	230.00	690.00
	10/19/2022	1.50	230.00	345.00
Total: PROJECT PROFESSIONAL		7.50		1,725.00

SENIOR PRINCIPAL

AUSTIN, LISA	10/12/2022	0.25	300.00	75.00
	10/18/2022	2.25	300.00	675.00
	10/20/2022	0.50	300.00	150.00
	10/24/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		3.25		975.00

Total Task : 01) ACCWP MPC

Task Labor

2,700.00**Task : 03) RMP**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/03/2022	2.75	230.00	632.50
	10/13/2022	0.25	230.00	57.50
	10/19/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.25		747.50

SENIOR PROFESSIONAL

HAVENS, KELLY	10/12/2022	0.25	255.00	63.75
	10/20/2022	1.50	255.00	382.50
Total: SENIOR PROFESSIONAL		1.75		446.25

SENIOR PRINCIPAL

AUSTIN, LISA	10/13/2022	1.00	300.00	300.00
	10/27/2022	0.75	300.00	225.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 03) RMP

Task Labor

1,718.75**Task : 05) TRASH MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/07/2022	0.25	230.00	57.50
	10/10/2022	0.25	230.00	57.50
	10/21/2022	0.25	230.00	57.50
	10/27/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.25		287.50

SENIOR PRINCIPAL

AUSTIN, LISA	10/05/2022	0.50	300.00	150.00
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Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	10/24/2022	0.25	300.00	75.00
	10/27/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.00		300.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

587.50

Task : 06) LID MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/19/2022	0.25	150.00	37.50
	10/21/2022	5.00	150.00	750.00
	10/22/2022	1.50	150.00	225.00
	10/26/2022	1.25	150.00	187.50
Total: STAFF PROFESSIONAL		8.00		1,200.00

PROJECT PROFESSIONAL

WELSH, LISA	10/07/2022	0.25	230.00	57.50
	10/10/2022	0.25	230.00	57.50
	10/11/2022	0.50	230.00	115.00
	10/17/2022	0.25	230.00	57.50
	10/18/2022	0.75	230.00	172.50
	10/19/2022	0.50	230.00	115.00
	10/20/2022	0.25	230.00	57.50
	10/21/2022	4.75	230.00	1,092.50
	10/27/2022	1.25	230.00	287.50
	10/28/2022	0.50	230.00	115.00
	10/31/2022	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		9.75		2,242.50

SENIOR PRINCIPAL

AUSTIN, LISA	10/05/2022	0.50	300.00	150.00
	10/12/2022	0.50	300.00	150.00
	10/19/2022	0.25	300.00	75.00
	10/27/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		1.75		525.00

Total Task : 06) LID MONITORING PLAN

Task Labor

3,967.50

Task : 07) POC MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/27/2022	0.25	230.00	57.50

Total Task : 07) POC MONITORING SUPPORT

Task Labor

57.50

Task : 08) POCS RWL PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/08/2022	1.00	150.00	150.00
	10/10/2022	4.00	150.00	600.00
Total: STAFF PROFESSIONAL		5.00		750.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/10/2022	0.25	230.00	57.50
	10/11/2022	1.25	230.00	287.50
	10/12/2022	0.75	230.00	172.50
	10/19/2022	0.25	230.00	57.50
	10/20/2022	1.00	230.00	230.00
	10/27/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		3.75		862.50
SENIOR PRINCIPAL				
AUSTIN, LISA	10/12/2022	1.50	300.00	450.00
	10/19/2022	0.25	300.00	75.00
	10/20/2022	0.50	300.00	150.00
	10/27/2022	0.25	300.00	75.00
	10/28/2022	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		2.75		825.00

Total Task : 08) POCS RWL PLAN

Task Labor

2,437.50

Task : 09) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	10/06/2022	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/05/2022	0.50	230.00	115.00
	10/07/2022	0.50	230.00	115.00
	10/22/2022	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.25		287.50
SENIOR PRINCIPAL				
AUSTIN, LISA	10/27/2022	0.25	300.00	75.00

Total Task : 09) ON CALL SUPPORT

Task Labor

407.50

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

11,876.25

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/04/2022	0.75	150.00	112.50
	10/12/2022	0.75	150.00	112.50
	10/13/2022	0.25	150.00	37.50
	10/14/2022	0.25	150.00	37.50
	10/28/2022	1.00	150.00	150.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	10/31/2022	1.00	150.00	150.00
Total: STAFF PROFESSIONAL		4.00		600.00
PROJECT PROFESSIONAL				
WELSH, LISA	10/04/2022	0.75	230.00	172.50
	10/06/2022	0.25	230.00	57.50
	10/12/2022	0.50	230.00	115.00
	10/13/2022	0.25	230.00	57.50
	10/20/2022	0.25	230.00	57.50
	10/28/2022	0.75	230.00	172.50
	10/31/2022	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		3.50		805.00
SENIOR PROFESSIONAL				
HAVENS, KELLY	10/04/2022	0.25	255.00	63.75
PRINCIPAL				
PERKINS, RINTA	10/04/2022	0.25	280.00	70.00
SENIOR PRINCIPAL				
AUSTIN, LISA	10/04/2022	0.25	300.00	75.00
	10/05/2022	1.75	300.00	525.00
	10/17/2022	2.00	300.00	600.00
	10/21/2022	0.75	300.00	225.00
	10/28/2022	1.25	300.00	375.00
	10/31/2022	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		6.50		1,950.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

3,488.75

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	10/22/2022	0.25	230.00	57.50

Total Task : 06) ON CALL SUPPORT

Task Labor

57.50

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

3,546.25

Total Project Labor

15,422.50

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

15,422.50

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

February 21, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #26
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$63,778.13
	Invoice #26 Total	\$63,778.13



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

February 14, 2023

Project No. - Invoice No: 00436.14-26

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 1/31/2023

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	7.00	224.00	\$1,568.00
Mathews, Sandra	20.00	315.00	\$6,300.00
Total Labor			\$7,868.00
Total This Task			\$7,868.00

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Ashby, Karen	11.75	315.00	\$3,701.25
Bardsley, Audra	2.50	224.00	\$560.00
Mathews, Sandra	12.25	315.00	\$3,858.75
Total Labor			\$8,120.00
Total This Task			\$8,120.00

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	5.00	315.00	\$1,575.00
Total Labor			\$1,575.00

Total This Task \$1,575.00

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	.50	260.00	\$130.00
Total Labor			<u>\$130.00</u>
Total This Task			<u>\$130.00</u>

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	5.50	126.00	\$693.00
Yin, Elizabeth	22.75	260.00	\$5,915.00
Total Labor			<u>\$6,608.00</u>

Reimbursable Expenses

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Software			
1/3/2023 Yin, Elizabeth	108.00		\$108.00
Total Reimbursables			<u>\$108.00</u>
Total This Task			<u>\$6,716.00</u>

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	1.50	260.00	\$390.00
Total Labor			<u>\$390.00</u>
Total This Task			<u>\$390.00</u>

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
2/7/2023 Geosyntec Consultants Inv. #500730	14,696.25	1.100	\$16,165.88
Total Consultants			<u>\$16,165.88</u>
Total This Task			<u>\$16,165.88</u>

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
2/7/2023 Geosyntec Consultants Inv. #500730	13,062.50	1.100	\$14,368.75
Total Consultants			<u>\$14,368.75</u>

Total This Task \$14,368.75

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	5.50	315.00	\$1,732.50
Total Labor			<u>\$1,732.50</u>
Total This Task			<u>\$1,732.50</u>

Task: 20.1 NDS Meetings

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Bardsley, Audra	4.75	224.00	\$1,064.00
Mathews, Sandra	6.50	315.00	\$2,047.50
Total Labor			<u>\$3,111.50</u>
Total This Task			<u>\$3,111.50</u>

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Bardsley, Audra	2.00	224.00	\$448.00
Indiresan, Shruti	1.00	160.00	\$160.00
Mathews, Sandra	1.75	315.00	\$551.25
Total Labor			<u>\$1,159.25</u>
Total This Task			<u>\$1,159.25</u>

Task: 20.4 C3TG Update/Technical Materials

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	3.75	315.00	\$1,181.25
McFadin, Sophie	10.00	126.00	\$1,260.00
Total Labor			<u>\$2,441.25</u>
Total This Task			<u>\$2,441.25</u>

Invoice Amount \$63,778.13

Billing Limits	Current	Prior	To-date
Total Billings	63,778.13	668,379.54	732,157.67
Limit			1,800,000.00
Remaining			1,067,842.33

Larry Walker Associates Team

Progress Report for Work in January 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Prepared Management Committee and Policy Level Subcommittee agenda packages.
- Participated in the January Management Committee and Policy Level Subcommittee meetings.
- Prepared and distributed action items and meeting summaries for the Management Committee and Policy Level Subcommittee meetings.

Task 14.2 MC/PLS As-needed Support

- Prepared agenda, meeting notes, and participated in the Planning and Budget Workgroup meeting.
- Coordinated and participated in the ACCWP Strategic Planning and Budget Project meeting; prepared and distributed the meeting summary.
- Updated subcommittee summary table.
- Program Management Support: tracked regional projects; updated Management Committee SharePoint site; began learning the new website; provided support for subcommittee facilitators; responded to public requests submitted via the website.
- Prepared technical information for the ACCWP legal counsel to support ACCWP's response on the State Water Board's Own Motion Review of MRP.

TASK 14.3 BAMSC

- Prepared for and participated in the January BAMSC internal and external steering committee meetings on behalf of the program.

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Coordinated with subcommittee members.

Task 16.3 Data Program Support

- Purchased Vimeo subscription at the direction of the subcommittee leaders and ACCWP.
- Coordinated with the GIS consultant.
- Participated in the ACCWP Strategic Planning and Budget Project meeting.
- Coordinated the ACCWP PLDA online training session planned for early February.
- Began uploading recent and archived recorded training sessions to the Vimeo site.

Task 16.3 Data Management Plan

- Continued with the development of the ACCWP Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Prepared and facilitated ACCWP MPC January quarterly meeting; drafted ACCWP MPC FY23-24 budget; drafted ACCWP MPC update for Management Committee meeting.
- Participated in BASMC MPC; transitioned to BASMC MPC co-chair.
- Participated in a regional meeting to discuss CEC monitoring.
- Reviewed UCMR cover letter and SSID report.
- Assisted the Program in planning for trash monitoring, site selection, and trash capture device sizing; participated in the monthly coordination call; participated in the internal TAG meeting.
- Assisted the Program in planning for LID monitoring and site selection; coordinated with the project team; participated in the monthly coordination call.
- Assisted ACCWP in planning for POCs monitoring.
- Participated in the monthly POCs RWL regional workgroup call; drafted the POCs PWL assessment report; coordinated and participated in the meeting with Regional Water Board staff.
- Coordinated with the project team; participated in Strategic Planning Meeting.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Continued development of the Old Industrial Control Measure Plan; continued analysis of project data and evaluated regional project potential; coordinated and facilitated meetings with Permittees to discuss planned projects.
- Reviewed Annual Report forms; compiled old industrial area layer for Oakland.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Continued work drafting the construction site program enhancements document and coordinating with the regional workgroup.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

- Prepared NDS agenda package.
- Participated in the January NDS meeting.
- Prepared and distributed the NDS action items and meeting summary.

Task 20.2 As Needed Support

- Responded to member information requests.

Task 20.4 C3TG Update/Technical Materials

- Continued with the update of the C.3 Technical Guidance Manual.3

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 24 BILLING PERIOD: January 1 - 31, 2023
 INVOICE DATE: January 12, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$69,000.00	59,071.00	17,563.00	76,634.00	(7,634.00)
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	4,991.00	-	4,991.00	5,009.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$89,200.00	24,626.88	7,236.00	31,862.88	57,337.12
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	35,498.38	16,165.88	51,664.26	64,605.74
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	26,829.56	14,368.75	41,198.31	72,651.69
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	14,938.75	1,732.50	16,671.25	15,328.75
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	23,461.25	6,712.00	30,173.25	31,826.75
TOTALS					\$1,032,920.00	\$668,379.54	\$63,778.13	\$732,157.67	\$300,762.33

Expense Report

Larry Walker Associates
For Period Ending 1/31/2023

Mileage Rate: \$0.655/mile

Project: **00436.14**

TASK	DATE	EMPLOYEE	TYPE	DETAILS	MILES	AMOUNT
						\$108.00
16.2	01/03/2023	Yin, Elizabeth	Software			\$108.00



Hi, ACCWP Program Manager!

Thanks for your purchase! Your support helps us do amazing things. Below is the receipt for your transaction on Jan 3, 2023:

Billing Information

Elizabeth Yin

94804 US

Payment Information

Card ending in **5224**

Your Purchase (Invoice #VIM67750678)

Vimeo Starter	\$108.00
Tax	\$0.00
Total	\$108.00

LOVE,
Vimeo

VIMEO, Inc.

555 West 18th Street, 2nd Floor.
New York, NY 10011

U.S. TIN: 26-2816886



Project 436.14
 517
 Task 17 \$14696.25
 Task 18 \$13062.50
 Total \$127758.75

PLEASE REMIT PAYMENT TO:
 Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 500730
Project : CWR0649B
Invoice Date : 2/7/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 1/31/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$27,758.75
Current Invoice	----- \$27,758.75

****Amount Due This Invoice **** **\$27,758.75**

Statement

Prior Billings	\$57,524.25
Current Invoice	\$27,758.75
Billed To Date	\$85,283.00
Paid To Date	\$22,357.50

Statement

Project Budget	\$216,200.00
Expended to Date	\$85,283.00
Contract Balance	\$130,917.00
**Amount Due This Invoice **	\$27,758.75

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/03/2023	0.25	230.00	57.50
	01/05/2023	1.75	230.00	402.50
	01/06/2023	0.75	230.00	172.50
	01/09/2023	0.25	230.00	57.50
	01/10/2023	1.50	230.00	345.00
	01/11/2023	0.25	230.00	57.50
	01/13/2023	2.00	230.00	460.00
	01/16/2023	0.25	230.00	57.50
	01/17/2023	4.00	230.00	920.00
	01/18/2023	1.25	230.00	287.50
	01/19/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		12.50		2,875.00

SENIOR PRINCIPAL

AUSTIN, LISA	01/16/2023	0.50	300.00	150.00
	01/17/2023	2.50	300.00	750.00
	01/18/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		3.50		1,050.00

Total Task : 01) ACCWP MPC

Task Labor

3,925.00

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/04/2023	1.50	230.00	345.00
SENIOR PRINCIPAL				
AUSTIN, LISA	01/03/2023	0.25	300.00	75.00
	01/04/2023	2.00	300.00	600.00
	01/24/2023	1.00	300.00	300.00
	01/26/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		3.75		1,125.00

Total Task : 02) BAMSC MPC

Task Labor

1,470.00

Task : 03) RMP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	01/16/2023	0.25	300.00	75.00
	01/18/2023	1.00	300.00	300.00
Total: SENIOR PRINCIPAL		1.25		375.00

Total Task : 03) RMP

Task Labor

375.00

Task : 04) UCMR SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/09/2023	0.25	230.00	57.50
	01/11/2023	0.75	230.00	172.50
	01/12/2023	1.00	230.00	230.00
	01/16/2023	0.25	230.00	57.50
	01/18/2023	0.25	230.00	57.50
	01/20/2023	1.00	230.00	230.00
Total: PROJECT PROFESSIONAL		3.50		805.00

SENIOR PRINCIPAL

AUSTIN, LISA	01/16/2023	2.00	300.00	600.00
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Total Task : 04) UCMR SUPPORT**Task Labor****1,405.00****Task : 05) TRASH MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	01/20/2023	0.25	150.00	37.50
SENIOR STAFF PROFESSIONAL				
HWANG, SAMUEL	01/05/2023	0.75	175.00	131.25
	01/06/2023	2.50	175.00	437.50
	01/09/2023	2.50	175.00	437.50
	01/12/2023	0.50	175.00	87.50
	01/18/2023	0.50	175.00	87.50
	01/31/2023	1.00	175.00	175.00
Total: SENIOR STAFF PROFESSIONAL		7.75		1,356.25

PROJECT PROFESSIONAL

WELSH, LISA	01/05/2023	0.25	230.00	57.50
	01/06/2023	0.50	230.00	115.00
	01/08/2023	0.75	230.00	172.50
	01/11/2023	0.75	230.00	172.50
	01/12/2023	0.25	230.00	57.50
	01/13/2023	0.25	230.00	57.50
	01/18/2023	0.75	230.00	172.50
	01/19/2023	0.25	230.00	57.50
	01/20/2023	0.50	230.00	115.00
	01/25/2023	0.25	230.00	57.50
	01/26/2023	1.00	230.00	230.00
	01/30/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		5.75		1,322.50

SENIOR PRINCIPAL

AUSTIN, LISA	01/06/2023	0.25	300.00	75.00
	01/13/2023	0.25	300.00	75.00
	01/26/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		0.75		225.00

Total Task : 05) TRASH MONITORING PLAN**Task Labor****2,941.25****Task : 06) LID MONITORING PLAN**

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/03/2023	0.25	230.00	57.50
	01/05/2023	0.25	230.00	57.50
	01/06/2023	0.75	230.00	172.50
	01/09/2023	0.25	230.00	57.50
	01/13/2023	0.25	230.00	57.50
	01/19/2023	0.50	230.00	115.00
	01/26/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		2.50		575.00

SENIOR PRINCIPAL

AUSTIN, LISA	01/06/2023	0.25	300.00	75.00
	01/13/2023	0.25	300.00	75.00
	01/20/2023	0.25	300.00	75.00
	01/26/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.00		300.00

Total Task : 06) LID MONITORING PLAN

Task Labor

875.00**Task : 07) POC MONITORING SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/12/2023	1.00	230.00	230.00
	01/20/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.50		345.00

SENIOR PRINCIPAL

AUSTIN, LISA	01/12/2023	0.50	300.00	150.00
	01/26/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		0.75		225.00

Total Task : 07) POC MONITORING SUPPORT

Task Labor

570.00**Task : 08) POCS RWL PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/11/2023	0.50	230.00	115.00
	01/20/2023	0.25	230.00	57.50
	01/23/2023	0.75	230.00	172.50
	01/26/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.75		402.50

SENIOR PRINCIPAL

AUSTIN, LISA	01/03/2023	0.50	300.00	150.00
	01/04/2023	0.75	300.00	225.00
	01/06/2023	0.25	300.00	75.00
	01/09/2023	0.50	300.00	150.00
	01/11/2023	0.50	300.00	150.00
	01/19/2023	0.75	300.00	225.00
	01/20/2023	0.25	300.00	75.00

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	01/23/2023	1.00	300.00	300.00
	01/24/2023	0.25	300.00	75.00
	01/25/2023	0.25	300.00	75.00
	01/26/2023	0.25	300.00	75.00
	01/27/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		5.50		1,650.00

Total Task : 08) POCS RWL PLAN

Task Labor

2,052.50

Task : 09) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	01/05/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	01/04/2023	0.50	230.00	115.00
	01/09/2023	0.25	230.00	57.50
	01/10/2023	0.25	230.00	57.50
	01/24/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.25		287.50

SENIOR PRINCIPAL

AUSTIN, LISA	01/05/2023	2.50	300.00	750.00
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Total Task : 09) ON CALL SUPPORT

Task Labor

1,082.50

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

14,696.25

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	01/03/2023	0.25	150.00	37.50
	01/11/2023	0.25	150.00	37.50
	01/13/2023	0.50	150.00	75.00
	01/16/2023	1.00	150.00	150.00
	01/20/2023	0.25	150.00	37.50
	01/27/2023	0.75	150.00	112.50
Total: STAFF PROFESSIONAL		3.00		450.00

SENIOR STAFF PROFESSIONAL

GALLO, ELIZABETH	01/03/2023	3.25	175.00	568.75
	01/04/2023	1.50	175.00	262.50
	01/05/2023	3.50	175.00	612.50
	01/06/2023	2.00	175.00	350.00
	01/09/2023	0.25	175.00	43.75
	01/10/2023	2.75	175.00	481.25
	01/11/2023	0.25	175.00	43.75
	01/12/2023	0.50	175.00	87.50
	01/16/2023	3.50	175.00	612.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
GALLO, ELIZABETH	01/17/2023	0.50	175.00	87.50
	01/18/2023	2.50	175.00	437.50
	01/19/2023	2.25	175.00	393.75
	01/20/2023	1.25	175.00	218.75
	01/23/2023	0.50	175.00	87.50
	01/24/2023	0.75	175.00	131.25
	01/25/2023	0.50	175.00	87.50
	01/27/2023	1.00	175.00	175.00
	01/30/2023	0.50	175.00	87.50
	01/31/2023	1.75	175.00	306.25
HWANG, SAMUEL	01/05/2023	0.50	175.00	87.50
Total: SENIOR STAFF PROFESSIONAL		29.50		5,162.50

PROJECT PROFESSIONAL				
WELSH, LISA	01/05/2023	0.75	230.00	172.50
	01/06/2023	1.00	230.00	230.00
	01/07/2023	0.50	230.00	115.00
	01/08/2023	2.00	230.00	460.00
	01/09/2023	0.50	230.00	115.00
	01/10/2023	0.50	230.00	115.00
	01/13/2023	0.25	230.00	57.50
	01/16/2023	0.50	230.00	115.00
	01/19/2023	2.50	230.00	575.00
	01/20/2023	0.50	230.00	115.00
	01/24/2023	0.75	230.00	172.50
	01/25/2023	4.50	230.00	1,035.00
	01/27/2023	2.50	230.00	575.00
	01/29/2023	0.25	230.00	57.50
	01/30/2023	0.75	230.00	172.50
	01/31/2023	1.00	230.00	230.00
Total: PROJECT PROFESSIONAL		18.75		4,312.50

SENIOR PRINCIPAL				
AUSTIN, LISA	01/05/2023	0.50	300.00	150.00
	01/13/2023	0.25	300.00	75.00
	01/18/2023	0.50	300.00	150.00
	01/20/2023	0.25	300.00	75.00
	01/25/2023	4.00	300.00	1,200.00
	01/26/2023	3.50	300.00	1,050.00
	01/27/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		9.50		2,850.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

12,775.00

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	01/08/2023	0.75	230.00	172.50
	01/10/2023	0.50	230.00	115.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Total: PROJECT PROFESSIONAL		1.25		287.50

Total Task : 06) ON CALL SUPPORT

Task Labor

287.50

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

13,062.50

Total Project Labor

27,758.75

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

27,758.75

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

March 16, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #27
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$54,409.88
	Invoice #27 Total	\$54,409.88



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

March 14, 2023
Project No. - Invoice No: 00436.14-27

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES
Project: 00436.14
PO # 7573
For Services Rendered Through 2/28/2023
Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	8.75	224.00	\$1,960.00
Mathews, Sandra	13.50	315.00	\$4,252.50
VanCarpels, Tina	1.50	135.00	\$202.50
Total Labor			\$6,415.00
Total This Task			\$6,415.00

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	12.75	315.00	\$4,016.25
VanCarpels, Tina	1.50	135.00	\$202.50
Total Labor			\$4,218.75
Total This Task			\$4,218.75

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	2.50	315.00	\$787.50
VanCarpels, Tina	.25	135.00	\$33.75

Total Labor	\$821.25
Total This Task	\$821.25

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	3.50	260.00	\$910.00
Total Labor			\$943.75
Total This Task			\$943.75

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	2.25	126.00	\$283.50
VanCarpels, Tina	1.00	135.00	\$135.00
Yin, Elizabeth	16.00	260.00	\$4,160.00
Total Labor			\$4,578.50
Total This Task			\$4,578.50

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	1.00	260.00	\$260.00
Total Labor			\$260.00
Total This Task			\$260.00

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
3/7/2023 Geosyntec Consultants Inv. #503891	16,166.25	1.100	\$17,782.88
Total Consultants			\$17,782.88
Total This Task			\$17,782.88

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
3/7/2023 Geosyntec Consultants Inv. #503891	10,017.50	1.100	\$11,019.25
Total Consultants			\$11,019.25
Total This Task			\$11,019.25

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Indiresan, Shruti	2.00	160.00	\$320.00
Mathews, Sandra	2.00	315.00	\$630.00
VanCarpels, Tina	.25	135.00	\$33.75
Total Labor			\$983.75
Total This Task			\$983.75

Task: 20.1 NDS Meetings

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	.50	315.00	\$157.50
McFadin, Sophie	1.50	126.00	\$189.00
Total Labor			\$346.50
Total This Task			\$346.50

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	2.50	315.00	\$787.50
Total Labor			\$787.50
Total This Task			\$787.50

Task: 20.3 Trainings

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	1.00	315.00	\$315.00
McFadin, Sophie	.75	126.00	\$94.50
Total Labor			\$409.50
Total This Task			\$409.50

Task: 20.4 C3TG Update/Technical Materials

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	5.75	315.00	\$1,811.25
McFadin, Sophie	32.00	126.00	\$4,032.00
Total Labor			\$5,843.25
Total This Task			\$5,843.25

Invoice Amount **\$54,409.88**

Billing Limits	Current	Prior	To-date
Total Billings	54,409.88	732,797.67	787,207.55
Limit			1,800,000.00
Remaining			1,012,792.45

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES: 436.14
 CONSULTANT INVOICE #: 27 BILLING PERIOD: February 1-28, 2023
 INVOICE DATE: March 14, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
 Contract No. 21344
 For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
 Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$138,000.00	77,274.00	11,455.00	88,729.00	49,271.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	4,991.00	-	4,991.00	5,009.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$95,200.00	31,862.88	5,782.25	37,645.13	57,554.87
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	51,664.26	17,782.88	69,447.14	46,822.86
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	41,198.31	11,019.25	52,217.56	61,632.44
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	16,671.25	983.75	17,655.00	14,345.00
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	30,173.25	7,386.75	37,560.00	24,440.00
TOTALS					\$1,107,920.00	\$732,797.67	\$54,409.88	\$787,207.55	\$320,712.45

Larry Walker Associates Team

Progress Report for Work in February 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Prepared the Management Committee and Policy Level Subcommittee agenda packages.
- Participated in the February Management Committee and Policy Level Subcommittee meetings.
- Prepared and distributed action items and meeting summaries for the Management Committee and Policy Level Subcommittee meetings.

Task 14.2 MC/PLS As-needed Support

- Prepared agenda, meeting notes, and participated in the Planning and Budget Workgroup meeting.
- Updated subcommittee summary table.
- Program Management Support: tracked regional projects; updated Management Committee SharePoint site; updated the website calendar; provided support for subcommittee facilitators; responded to public requests submitted via the website.
- Finalized technical information for the ACCWP legal counsel to support ACCWP's response on the State Water Board's Own Motion Review of MRP.
- Prepared progress report.

TASK 14.3 BAMSC

- Prepared for and participated in the February BAMSC internal and external Steering Committee meetings on behalf of the program.

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Prepared for and participated in the subcommittee meeting.

Task 16.3 Data Program Support

- Drafted the subcommittee FY 2023-24 budget.
- Prepared for and participated in the PLDA online training session.
- Continued uploading recent and archived recorded training sessions to the Vimeo site.

Task 16.3 Data Management Plan

- Continued development of the ACCWP Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Attended website training; drafted ACCWP MPC update for the Management Committee meeting; drafted ACCWP MPC FY 2023-24 budget.
- Drafted BASMC MPC meeting agenda and January summary; participated in BAMSC Steering Committee external meeting.
- Reviewed UCMR reports; coordinated Permittee review of the UCMR.
- Assisted the Program in planning for trash monitoring, site selection, and trash capture device sizing; participated in the monthly coordination call; participated in the internal TAG meeting.
- Assisted the Program in planning for LID monitoring and site selection; coordinated with the project team; participated in the monthly coordination call; participated in the internal TAG meeting; reviewed and facilitated Permittee review of the LID Monitoring Plan and QAPP.
- Assisted the Program in planning for POCs monitoring; drafted plan for WY2023 monitoring.
- Participated in the monthly POCs RWL regional workgroup call; revised the POCs PWL assessment report.
- Coordinated with the project team.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Continued analysis of project data and evaluated regional project potential; drafted the Old Industrial Control Measure Plan; coordinated Permittee review of the Old Industrial Control Measure Plan.
- Coordinated with the project team.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Continued work on the construction site program enhancements document.
- Responded to Permittee questions on the documents.
- Summarized comments received and prepared responses for discussion at the workgroup meeting.
- Prepared for the regional workgroup planned for early March.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

- Followed-up on NDS meeting actions.

Task 20.2 As Needed Support

- Responded to member information requests.
- Provided C.3 information to members and distributed regional workgroup information to NDS members.

Task 20.3 Training

- Prepared for and participated in the NDS training workgroup meeting to plan the 2023 C.3 workshop.

Task 20.4 C3TG Update/Technical Materials

- Prepared for and participated in the NDS C.3TG workgroup meeting to review comments on the manual.
- Continued with the update of the C.3 Technical Guidance Manual addressing comments and preparing appendices.



436.14
 517
 Task 17 \$16,166.25
 Task Task 18 \$10,017.50

PLEASE REMIT PAYMENT TO:
 Geosyntec Consultants, Inc.
 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 503891
Project : CWR0649B
Invoice Date : 3/7/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 2/28/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$26,183.75
Current Invoice	\$26,183.75

****Amount Due This Invoice **** **\$26,183.75**

Statement

Prior Billings \$85,283.00
 Current Invoice \$26,183.75
 Billed To Date \$111,466.75
 Paid To Date \$37,754.50

Statement

Project Budget \$216,200.00
 Expended to Date \$111,466.75
 Contract Balance \$104,733.25
****Amount Due This Invoice **** **\$26,183.75**

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	02/02/2023	0.50	230.00	115.00
	02/15/2023	0.50	230.00	115.00
	02/28/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		1.75		402.50

Total Task : 01) ACCWP MPC

Task Labor

402.50

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	02/21/2023	3.00	300.00	900.00
	02/23/2023	2.00	300.00	600.00
	02/27/2023	1.00	300.00	300.00
Total: SENIOR PRINCIPAL		6.00		1,800.00

Total Task : 02) BAMSC MPC

Task Labor

1,800.00

Task : 04) UCMR SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	02/06/2023	0.25	230.00	57.50
	02/07/2023	0.25	230.00	57.50
	02/10/2023	0.25	230.00	57.50
	02/13/2023	0.25	230.00	57.50
	02/14/2023	0.75	230.00	172.50
	02/15/2023	0.50	230.00	115.00
	02/16/2023	4.25	230.00	977.50
	02/17/2023	1.00	230.00	230.00
	02/18/2023	1.50	230.00	345.00
	02/21/2023	3.50	230.00	805.00
	02/22/2023	1.50	230.00	345.00
	02/28/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		14.75		3,392.50

SENIOR PRINCIPAL

AUSTIN, LISA	02/15/2023	5.00	300.00	1,500.00
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Total Task : 04) UCMR SUPPORT

Task Labor

4,892.50

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	02/03/2023	0.25	150.00	37.50
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	02/28/2023	0.25	175.00	43.75
HWANG, SAMUEL	02/06/2023	1.00	175.00	175.00

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Total: SENIOR STAFF PROFESSIONAL		1.25		218.75
PROFESSIONAL				
CHARNEY, RYAN	02/14/2023	0.50	200.00	100.00
	02/15/2023	0.50	200.00	100.00
	02/16/2023	4.00	200.00	800.00
Total: PROFESSIONAL		5.00		1,000.00
PROJECT PROFESSIONAL				
WELSH, LISA	02/01/2023	1.00	230.00	230.00
	02/03/2023	0.25	230.00	57.50
	02/06/2023	1.00	230.00	230.00
	02/14/2023	0.50	230.00	115.00
	02/15/2023	0.25	230.00	57.50
	02/16/2023	2.50	230.00	575.00
	02/22/2023	1.75	230.00	402.50
	02/23/2023	1.00	230.00	230.00
	02/24/2023	0.50	230.00	115.00
	02/27/2023	0.25	230.00	57.50
	02/28/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		9.25		2,127.50
SENIOR PRINCIPAL				
AUSTIN, LISA	02/14/2023	0.25	300.00	75.00
	02/22/2023	0.50	300.00	150.00
	02/28/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		1.25		375.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

3,758.75

Task : 06) LID MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	02/01/2023	1.00	230.00	230.00
	02/02/2023	0.50	230.00	115.00
	02/03/2023	0.75	230.00	172.50
	02/07/2023	0.25	230.00	57.50
	02/10/2023	0.75	230.00	172.50
	02/21/2023	0.25	230.00	57.50
	02/23/2023	0.50	230.00	115.00
	02/24/2023	0.25	230.00	57.50
	02/28/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		4.75		1,092.50
SENIOR PRINCIPAL				
AUSTIN, LISA	02/24/2023	0.50	300.00	150.00
	02/28/2023	2.00	300.00	600.00
Total: SENIOR PRINCIPAL		2.50		750.00

Total Task : 06) LID MONITORING PLAN

Task Labor

1,842.50

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 07) POC MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	02/16/2023	0.75	230.00	172.50
	02/20/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		1.50		345.00

SENIOR PRINCIPAL

AUSTIN, LISA	02/16/2023	3.50	300.00	1,050.00
	02/17/2023	0.50	300.00	150.00
	02/20/2023	1.25	300.00	375.00
Total: SENIOR PRINCIPAL		5.25		1,575.00

Total Task : 07) POC MONITORING SUPPORT

Task Labor

1,920.00

Task : 08) POCS RWL PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	02/08/2023	0.50	230.00	115.00
SENIOR PRINCIPAL				
AUSTIN, LISA	02/07/2023	2.00	300.00	600.00
	02/08/2023	0.75	300.00	225.00
	02/13/2023	0.25	300.00	75.00
	02/17/2023	1.00	300.00	300.00
	02/28/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		4.25		1,275.00

Total Task : 08) POCS RWL PLAN

Task Labor

1,390.00

Task : 09) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	02/07/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	02/06/2023	0.25	230.00	57.50
	02/07/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		0.50		115.00

Total Task : 09) ON CALL SUPPORT

Task Labor

160.00

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

16,166.25

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
STAFF PROFESSIONAL				
YAO, GRACE	02/03/2023	0.25	150.00	37.50
	02/24/2023	0.25	150.00	37.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Total: STAFF PROFESSIONAL		0.50		75.00
SENIOR STAFF PROFESSIONAL				
GALLO, ELIZABETH	02/01/2023	4.00	175.00	700.00
	02/02/2023	4.00	175.00	700.00
	02/03/2023	1.50	175.00	262.50
	02/06/2023	1.25	175.00	218.75
	02/07/2023	2.25	175.00	393.75
	02/09/2023	0.50	175.00	87.50
	02/13/2023	2.50	175.00	437.50
	02/14/2023	1.00	175.00	175.00
	02/15/2023	1.00	175.00	175.00
	02/16/2023	1.00	175.00	175.00
	02/22/2023	0.50	175.00	87.50
	02/24/2023	0.75	175.00	131.25
	02/27/2023	2.75	175.00	481.25
	02/28/2023	2.00	175.00	350.00
Total: SENIOR STAFF PROFESSIONAL		25.00		4,375.00
PROJECT PROFESSIONAL				
WELSH, LISA	02/01/2023	0.25	230.00	57.50
	02/02/2023	1.25	230.00	287.50
	02/03/2023	1.75	230.00	402.50
	02/04/2023	1.00	230.00	230.00
	02/08/2023	0.75	230.00	172.50
	02/09/2023	0.25	230.00	57.50
	02/10/2023	0.50	230.00	115.00
	02/13/2023	0.25	230.00	57.50
	02/14/2023	0.25	230.00	57.50
	02/15/2023	2.00	230.00	460.00
	02/16/2023	0.25	230.00	57.50
	02/21/2023	0.50	230.00	115.00
	02/22/2023	0.50	230.00	115.00
	02/24/2023	0.75	230.00	172.50
	02/28/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		11.00		2,530.00
PRINCIPAL				
PERKINS, RINTA	02/08/2023	3.00	280.00	840.00
SENIOR PRINCIPAL				
AUSTIN, LISA	02/03/2023	1.00	300.00	300.00
	02/07/2023	1.00	300.00	300.00
	02/08/2023	0.25	300.00	75.00
	02/09/2023	2.50	300.00	750.00
	02/13/2023	0.25	300.00	75.00
	02/22/2023	1.50	300.00	450.00
	02/24/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		6.75		2,025.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

9,845.00

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 06) ON CALL SUPPORT

<i>Class / Employee Name</i>	<i>Date</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>
PROJECT PROFESSIONAL				
WELSH, LISA	02/06/2023	0.25	230.00	57.50
	02/07/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		0.75		172.50

Total Task : 06) ON CALL SUPPORT

Task Labor

172.50

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

10,017.50

Total Project Labor

26,183.75

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

26,183.75

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

April 20, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #28
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$46,081.88
	Invoice #28 Total	\$46,081.88



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

April 13, 2023

Project No. - Invoice No: 00436.14-28

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 3/31/2023

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	6.75	224.00	\$1,512.00
Mathews, Sandra	22.25	315.00	\$7,008.75
VanCarpels, Tina	2.00	135.00	\$270.00
Total Labor			\$8,790.75
Total This Task			\$8,790.75

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	8.00	315.00	\$2,520.00
VanCarpels, Tina	.50	135.00	\$67.50
Total Labor			\$2,587.50
Total This Task			\$2,587.50

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	5.00	315.00	\$1,575.00
VanCarpels, Tina	.25	135.00	\$33.75

Total Labor	\$1,608.75
Total This Task	\$1,608.75

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	5.75	260.00	\$1,495.00
Total Labor			\$1,528.75
Total This Task			\$1,528.75

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	2.00	260.00	\$520.00
Total Labor			\$520.00
Total This Task			\$520.00

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	16.75	126.00	\$2,110.50
VanCarpels, Tina	.75	135.00	\$101.25
Yin, Elizabeth	4.00	260.00	\$1,040.00
Total Labor			\$3,251.75
Total This Task			\$3,251.75

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
4/4/2023 Geosyntec Consultants Inv. #507174	13,445.00	1.100	\$14,789.50
Total Consultants			\$14,789.50
Total This Task			\$14,789.50

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
4/4/2023 Geosyntec Consultants Inv. #507174	6,218.75	1.100	\$6,840.63
Total Consultants			\$6,840.63
Total This Task			\$6,840.63

Task: 19.2 PCBs Demolition Guidance

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Indiresan, Shruti	1.25	160.00	\$200.00
Mathews, Sandra	9.50	315.00	\$2,992.50
VanCarpels, Tina	.75	135.00	\$101.25
Total Labor			\$3,293.75
Total This Task			\$3,293.75

Task: 20.1 NDS Meetings

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	1.25	315.00	\$393.75
Total Labor			\$393.75
Total This Task			\$393.75

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	2.75	315.00	\$866.25
Total Labor			\$866.25
Total This Task			\$866.25

Task: 20.3 Trainings

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Mathews, Sandra	2.00	315.00	\$630.00
Total Labor			\$630.00
Total This Task			\$630.00

Task: 20.4 C3TG Update/Technical Materials

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
McFadin, Sophie	5.75	126.00	\$724.50
Sawdaye, Hayleigh	2.00	128.00	\$256.00
Total Labor			\$980.50
Total This Task			\$980.50

Invoice Amount **\$46,081.88**

Billing Limits	Current	Prior	To-date
Total Billings	46,081.88	787,207.55	833,289.43

Limit

1,800,000.00

Remaining

966,710.57

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
CONSULTANT INVOICE #: 27
INVOICE DATE:

436.14
BILLING PERIOD: March 1-31, 2023
April 13, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
Contract No. 21344
For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$138,000.00	88,729.00	12,987.00	101,716.00	36,284.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	4,991.00	-	4,991.00	5,009.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$95,200.00	37,645.13	5,300.50	42,945.63	52,254.37
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	69,447.14	14,789.50	84,236.64	32,033.36
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	52,217.56	6,840.63	59,058.19	54,791.81
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	17,655.00	3,293.75	20,948.75	11,051.25
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	37,560.00	2,870.50	40,430.50	21,569.50
TOTALS					\$1,107,920.00	\$787,207.55	\$46,081.88	\$833,289.43	\$274,630.57

Larry Walker Associates Team

Progress Report for Work in March 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Finalized the Management Committee and Policy Level Subcommittee agenda packages.
- Participated in the March Management Committee and Policy Level Subcommittee meetings.
- Prepared and distributed action items and summaries for the Management Committee and Policy Level Subcommittee meetings and followed up on action items from the meetings, including trash non-compliance reporting and support for the CASQA letter on the water bond.
- Prepared agenda, meeting notes, and participated in the Planning and Budget workgroup meeting.
- Participated in the meeting to discuss information for the final WQIF grant agreement.
- Prepared progress report.

Task 14.2 MC/PLS As-needed Support

- Participated in program management discussion with EOA regarding asset management and cost reporting tasks.
- Worked with graphic designer to update the ACCWP letterhead.
- Updated subcommittee list and finalized the subcommittee leadership responsibilities document.
- Updated the ACCWP website and SharePoint site.
- Responded to public requests submitted via the website.
- Prepared a list of ACCWP contracts for the program management fiscal agent transition.
- Worked with the MPC facilitator to finalize the transmittal letters for signature by the Management Committee Chair.
- Observed the Unfunded Mandate hearing.
- Participated in meetings with the Regional Water Board on the road reconstruction in DACs amendments.

TASK 14.3 BAMSC

- Prepared for and participated in the March BAMSC internal and external Steering Committee meetings.
- Participated in the road reconstruction in DACs regional workgroup .

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Prepared for and participated in the subcommittee meeting.
- Provided updates for the Management Committee agenda package and input on the FY 2023-24 subcommittee budget.

Task 16.3 Data Program Support

- Prepared and distributed meeting notes and materials.

Task 16.3 Data Management Plan

- Continued development of the ACCWP Information Management Plan.
- Participated in meeting to discuss the Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Drafted the MPC update for Management Committee meeting; participated in ACCWP Management Committee meeting; revised ACCWP MPC FY 2023-24 budget.
- Facilitated BAMSC MPC meeting and participated in BAMSC SC external meeting.
- Coordinated Permittee review of the WY2022 UCMR; finalized and submitted WY2022 UCMR.
- Assisted the Program in planning for trash monitoring; participated in the monthly coordination call; participated in Trash TAG Meeting #1.
- Assisted the Program in planning for LID monitoring; participated in the monthly coordination call; participated in LID TAG Meeting #2; prepared a response to TAG comments.
- Assisted the Program in planning for POCs monitoring.
- Finalized the POCs RWL assessment report.
- Coordinated with the project team.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Revised, finalized, and submitted the Old Industrial Control Measure Plan; reviewed regional project screening analysis.
- Reviewed requirements for PCBs in Electrical Utilities and Bridges as they apply to ACCWP.
- Coordinated with the project team.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Completed updates to the construction site program enhancements document in response to comments and prepared a response to comments table.
- Reviewed updates to the applicant package.
- Participated in the final PCBs regional workgroup meetings.
- Presented an update on the regional project at the BAMSC Development Committee meeting.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

- Prepared the NDS agenda package and updated the workplan.

Task 20.2 As Needed Support

- Responded to member information requests on C.3 implementation.
- Distributed regional workgroup information to NDS members and provided updates to the NDS.
- Prepared updates to the NDS FY2023-24 budget.

Task 20.3 Training

- Drafted the C.3 workshop agenda and registration flyer.

Task 20.4 C3TG Update/Technical Materials

- Completed the update of the C.3 Technical Guidance Manual, compiled the final document, and posted it to the website.



PLEASE REMIT PAYMENT TO:
 Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 507174
Project : CWR0649B
Invoice Date : 4/4/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 3/31/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$19,663.75
Current Invoice	\$19,663.75

****Amount Due This Invoice **** **\$19,663.75**

Statement

Prior Billings	\$111,466.75
Current Invoice	\$19,663.75
Billed To Date	\$131,130.50
Paid To Date	\$57,524.25

Statement

Project Budget	\$216,200.00
Expended to Date	\$131,130.50
Contract Balance	\$85,069.50
**Amount Due This Invoice **	\$19,663.75

Project # 436.14	
517	
Task 17 \$13,445	
Task 18 \$ 6,218.75	
Total	\$19,663.75

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	03/06/2023	0.25	230.00	57.50
	03/15/2023	1.00	230.00	230.00
	03/16/2023	0.25	230.00	57.50
	03/20/2023	0.50	230.00	115.00
	03/21/2023	0.75	230.00	172.50
	03/22/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		3.50		805.00

Total Task : 01) ACCWP MPC

Task Labor

805.00

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	03/01/2023	1.75	230.00	402.50
SENIOR PRINCIPAL				
AUSTIN, LISA	03/01/2023	2.50	300.00	750.00
	03/03/2023	0.25	300.00	75.00
	03/23/2023	2.00	300.00	600.00
Total: SENIOR PRINCIPAL		4.75		1,425.00

Total Task : 02) BAMSC MPC

Task Labor

1,827.50

Task : 04) UCMR SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	03/09/2023	0.25	230.00	57.50
	03/10/2023	0.75	230.00	172.50
	03/14/2023	1.50	230.00	345.00
	03/15/2023	0.50	230.00	115.00
	03/17/2023	0.75	230.00	172.50
	03/22/2023	0.50	230.00	115.00
	03/23/2023	0.75	230.00	172.50
	03/29/2023	1.00	230.00	230.00
	03/30/2023	1.00	230.00	230.00
Total: PROJECT PROFESSIONAL		7.00		1,610.00

SENIOR PRINCIPAL

AUSTIN, LISA	03/10/2023	0.25	300.00	75.00
	03/15/2023	2.25	300.00	675.00
	03/29/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		2.75		825.00

Total Task : 04) UCMR SUPPORT

Task Labor

2,435.00

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
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Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	03/06/2023	0.25	175.00	43.75
	03/07/2023	5.00	175.00	875.00
	03/08/2023	0.25	175.00	43.75
	03/17/2023	0.50	175.00	87.50
	03/21/2023	1.00	175.00	175.00
	03/23/2023	2.00	175.00	350.00
Total: SENIOR STAFF PROFESSIONAL		9.00		1,575.00

PROJECT PROFESSIONAL

WELSH, LISA	03/02/2023	0.50	230.00	115.00
	03/03/2023	0.75	230.00	172.50
	03/06/2023	0.25	230.00	57.50
	03/07/2023	0.50	230.00	115.00
	03/08/2023	0.25	230.00	57.50
	03/09/2023	0.50	230.00	115.00
	03/10/2023	0.25	230.00	57.50
	03/13/2023	0.75	230.00	172.50
	03/14/2023	0.50	230.00	115.00
	03/15/2023	0.25	230.00	57.50
	03/16/2023	0.25	230.00	57.50
	03/17/2023	0.25	230.00	57.50
	03/27/2023	0.50	230.00	115.00
	03/28/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		5.75		1,322.50

SENIOR PRINCIPAL

AUSTIN, LISA	03/03/2023	0.75	300.00	225.00
	03/07/2023	0.25	300.00	75.00
	03/10/2023	0.25	300.00	75.00
	03/14/2023	0.25	300.00	75.00
	03/15/2023	1.50	300.00	450.00
	03/16/2023	0.25	300.00	75.00
	03/17/2023	0.25	300.00	75.00
	03/27/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		4.00		1,200.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

4,097.50**Task : 06) LID MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	03/17/2023	1.00	230.00	230.00
	03/20/2023	0.75	230.00	172.50
	03/21/2023	1.50	230.00	345.00
	03/27/2023	1.00	230.00	230.00
	03/29/2023	1.00	230.00	230.00
	03/30/2023	0.25	230.00	57.50
	03/31/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		5.75		1,322.50

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	03/08/2023	0.50	300.00	150.00
	03/17/2023	0.25	300.00	75.00
	03/20/2023	1.50	300.00	450.00
	03/21/2023	1.50	300.00	450.00
	03/27/2023	1.00	300.00	300.00
	03/28/2023	0.25	300.00	75.00
	03/29/2023	1.00	300.00	300.00
	03/30/2023	1.50	300.00	450.00
Total: SENIOR PRINCIPAL		7.50		2,250.00

Total Task : 06) LID MONITORING PLAN**Task Labor****3,572.50****Task : 07) POC MONITORING SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	03/28/2023	0.25	230.00	57.50
	03/31/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		0.75		172.50

Total Task : 07) POC MONITORING SUPPORT**Task Labor****172.50****Task : 08) POCS RWL PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	03/09/2023	0.25	300.00	75.00
	03/10/2023	0.25	300.00	75.00
	03/13/2023	0.50	300.00	150.00
	03/14/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.25		375.00

Total Task : 08) POCS RWL PLAN**Task Labor****375.00****Task : 09) ON CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	03/07/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	03/06/2023	0.25	230.00	57.50
	03/07/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		0.50		115.00

Total Task : 09) ON CALL SUPPORT**Task Labor****160.00****Total Phase : 01) TASK 17 MONITORING SUPPORT****Phase Labor****13,445.00**

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
GALLO, ELIZABETH	03/01/2023	2.00	175.00	350.00
	03/02/2023	2.00	175.00	350.00
	03/03/2023	1.00	175.00	175.00
	03/08/2023	1.25	175.00	218.75
	03/09/2023	0.50	175.00	87.50
	03/13/2023	0.50	175.00	87.50
	03/14/2023	2.00	175.00	350.00
	03/17/2023	0.50	175.00	87.50
	03/21/2023	0.50	175.00	87.50
	03/30/2023	0.50	175.00	87.50
	03/31/2023	0.50	175.00	87.50
YAO, GRACE	03/10/2023	0.50	175.00	87.50
	03/24/2023	3.00	175.00	525.00
	03/25/2023	0.50	175.00	87.50
	03/31/2023	1.50	175.00	262.50
Total: SENIOR STAFF PROFESSIONAL		16.75		2,931.25

PROJECT PROFESSIONAL

WELSH, LISA	03/02/2023	1.50	230.00	345.00
	03/03/2023	1.00	230.00	230.00
	03/07/2023	0.75	230.00	172.50
	03/10/2023	0.50	230.00	115.00
	03/13/2023	1.00	230.00	230.00
	03/14/2023	0.50	230.00	115.00
	03/15/2023	0.75	230.00	172.50
	03/16/2023	0.50	230.00	115.00
	03/21/2023	0.25	230.00	57.50
	03/22/2023	0.50	230.00	115.00
	03/30/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		8.00		1,840.00

SENIOR PRINCIPAL

AUSTIN, LISA	03/02/2023	0.50	300.00	150.00
	03/07/2023	1.00	300.00	300.00
	03/14/2023	1.75	300.00	525.00
	03/29/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		3.75		1,125.00

Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

5,896.25

Task : 05) OTHER C11 C12 SUBPROVISIONS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	03/31/2023	0.50	300.00	150.00

Total Task : 05) OTHER C11 C12 SUBPROVISIONS

Task Labor

150.00

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
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Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<i>Class / Employee Name</i>	<i>Date</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>
PROJECT PROFESSIONAL				
WELSH, LISA	03/06/2023	0.50	230.00	115.00
	03/16/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		0.75		172.50

Total Task : 06) ON CALL SUPPORT

Task Labor

172.50

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

6,218.75

Total Project Labor

19,663.75

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

19,663.75

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

May 24, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #29
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$49,677.88
	Invoice #29 Total	\$49,677.88



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

May 16, 2023

Project No. - Invoice No: 00436.14-29

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 4/30/2023

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	7.25	224.00	\$1,624.00
Mathews, Sandra	12.00	315.00	\$3,780.00
VanCarpels, Tina	1.25	135.00	\$168.75
Total Labor			\$5,572.75
Total This Task			\$5,572.75

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	13.50	315.00	\$4,252.50
VanCarpels, Tina	1.00	135.00	\$135.00
Total Labor			\$4,387.50
Total This Task			\$4,387.50

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	10.50	315.00	\$3,307.50
VanCarpels, Tina	.75	135.00	\$101.25

Total Labor	\$3,408.75
Total This Task	\$3,408.75

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Warren, Rachel	.25	260.00	\$65.00
Total Labor			\$65.00
Total This Task			\$65.00

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	2.50	260.00	\$650.00
Total Labor			\$650.00
Total This Task			\$650.00

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	.50	260.00	\$130.00
Total Labor			\$130.00
Total This Task			\$130.00

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	.50	126.00	\$63.00
VanCarpels, Tina	.25	135.00	\$33.75
Yin, Elizabeth	4.00	260.00	\$1,040.00
Total Labor			\$1,136.75
Total This Task			\$1,136.75

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
5/5/2023 Geosyntec Consultants Inv. #510582	18,957.50	1.100	\$20,853.25
Total Consultants			\$20,853.25
Total This Task			\$20,853.25

Limit

1,800,000.00

Remaining

917,032.69

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
CONSULTANT INVOICE #: 27
INVOICE DATE:

436.14
BILLING PERIOD: April 1-30, 2023
May 16, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
Contract No. 21344
For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$138,000.00	101,716.00	13,369.00	115,085.00	22,915.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$10,000.00	4,991.00	65.00	5,056.00	4,944.00
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$95,200.00	42,945.63	1,916.75	44,862.38	50,337.62
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	84,236.64	20,853.25	105,089.89	11,180.11
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	59,058.19	4,393.13	63,451.32	50,398.68
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	20,948.75	866.25	21,815.00	10,185.00
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	40,430.50	8,214.50	48,645.00	13,355.00
TOTALS					\$1,107,920.00	\$833,289.43	\$49,677.88	\$882,967.31	\$224,952.69

Larry Walker Associates Team

Progress Report for Work in April 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Prepared and finalized the Management Committee and Policy Level Subcommittee agenda packages.
- Participated in the April Management Committee and Policy Level Subcommittee meetings.
- Prepared and distributed action items and summaries for the Management Committee and Policy Level Subcommittee meetings.
- Prepared agenda, meeting notes, and participated in the Planning and Budget workgroup meeting.
- Prepared progress report.

Task 14.2 MC/PLS As-needed Support

- Finalized and submitted the ACCWP comment letter on the proposed MRP C.3 amendments.
- Coordinated with the ACCWP website designer and subcommittee facilitators to troubleshoot issues with posting documents to the website.
- Updated the ACCWP website and SharePoint site.
- Responded to public requests submitted via the website.
- Provided information to the ACCWP legal counsel to support a decision on a potential MRP 3 unfunded mandate test claim.
- Began drafting the Management Committee roles and responsibilities document.

TASK 14.3 BAMSC

- Prepared for and participated in the April BAMSC internal and external Steering Committee meetings.
- Participated in regional workgroups related to the proposed MRP C.3 amendments.

Task 15 Annual Report (PRC2-22/23)

- Began planning for the ACCWP Program Annual Report.

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Prepared the subcommittee meeting summary.
- Coordinated with the subcommittee.

Task 16.2 DMSC Program Support

- Coordinated with ACCWP subcommittees.

Task 16.3 Data Management Plan

- Continued development of the ACCWP Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Drafted the ACCWP MPC update for Management Committee meeting and participated in ACCWP Management Committee meeting;
- Reviewed the draft 2024 303(d) list.
- Prepared for the BAMSC MPC meeting.
- Participated in the ECWG/SPLWG meeting.
- Assisted ACCWP in planning for trash monitoring;
- Prepared report sections for the regional Trash Monitoring Plan and participated in the monthly coordination call.
- Revised, finalized, and submitted the ACCWP LID Monitoring Plan.
- Assisted the ACCWP in planning for LID monitoring and participated in the monthly coordination call.
- Assisted ACCWP in planning for POCs monitoring.
- Coordinated with the project team.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Prepared regional project screening analysis.
- Assisted the ACCWP with the PCBs in Bridges and Electrical Utilities and mercury recycling requirements.
- Coordinated with the project team.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Revised the construction site program enhancements document in response to comments from the Countywide programs and revised the response to comments table.
- Reviewed the final updates to the applicant package.
- Review the PCBs regional workgroup meeting summary.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

- Prepared and finalized the NDS agenda package.
- Participated in the April NDS meeting.
- Prepared and distributed action items and the summary for the NDS meeting. .

Task 20.2 As Needed Support

- Responded to member information requests on C.3 implementation.
- Facilitated the development of comments on the proposed MRP C.3 amendments.

Task 20.3 Training

- Continued planning for the May 16, 2023, C.3 workshop.
- Participated in training workgroup meeting.
- Began preparation of training materials.



436.14
 517
 Task 17 \$ 18,957.50
 Task 18 \$ 3,993.75
 Total \$ 22,951.25

Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 510582
Project : CWR0649B
Invoice Date : 5/5/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 4/30/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$22,951.25
Current Invoice	\$22,951.25

****Amount Due This Invoice **** **\$22,951.25**

Statement

Prior Billings \$131,130.50
 Current Invoice \$22,951.25
 Billed To Date \$154,081.75
 Paid To Date \$111,466.75

Statement

Project Budget \$216,200.00
 Expended to Date \$154,081.75
 Contract Balance \$62,118.25
****Amount Due This Invoice **** **\$22,951.25**

When making payment via bank, please include our invoice number in ACH information; Please email invoice payment remittance/details to CorporateAR@Geosyntec.com.

Bank Details: Citibank N.A.
Coconut Creek Branch 0529
 4807 Coconut Creek Pkwy
 Coconut Creek, FL 33063

Account #: 2195223812
ABA/Routing: 067004764 (ACH)
Swift: CITI US 33

When making payment via check, please remit payment to: **Mail Code 11160**
P.O. Box 70280
Philadelphia, PA 19176-0280

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	04/14/2023	0.75	175.00	131.25
	04/15/2023	0.75	175.00	131.25
	04/17/2023	1.50	175.00	262.50
Total: SENIOR STAFF PROFESSIONAL		3.00		525.00

PROJECT PROFESSIONAL

WELSH, LISA	04/03/2023	0.75	230.00	172.50
	04/04/2023	0.50	230.00	115.00
	04/07/2023	0.25	230.00	57.50
	04/10/2023	0.25	230.00	57.50
	04/11/2023	0.25	230.00	57.50
	04/12/2023	0.50	230.00	115.00
	04/13/2023	0.50	230.00	115.00
	04/14/2023	2.25	230.00	517.50
	04/16/2023	0.75	230.00	172.50
	04/17/2023	1.50	230.00	345.00
	04/18/2023	2.50	230.00	575.00
	04/19/2023	0.75	230.00	172.50
	04/20/2023	1.00	230.00	230.00
	04/26/2023	0.75	230.00	172.50
	04/27/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		13.00		2,990.00

SENIOR PRINCIPAL

AUSTIN, LISA	04/17/2023	0.25	300.00	75.00
	04/18/2023	2.50	300.00	750.00
Total: SENIOR PRINCIPAL		2.75		825.00

Total Task : 01) ACCWP MPC**Task Labor****4,340.00****Task : 02) BAMSC MPC**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/17/2023	0.25	230.00	57.50
	04/21/2023	0.50	230.00	115.00
	04/25/2023	0.50	230.00	115.00
	04/26/2023	0.25	230.00	57.50
	04/27/2023	0.25	230.00	57.50
	04/28/2023	1.25	230.00	287.50
Total: PROJECT PROFESSIONAL		3.00		690.00

SENIOR PRINCIPAL

AUSTIN, LISA	04/19/2023	0.75	300.00	225.00
	04/20/2023	2.25	300.00	675.00
	04/21/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		3.50		1,050.00

Total Task : 02) BAMSC MPC**Task Labor****1,740.00**

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 03) RMP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/06/2023	0.25	230.00	57.50
	04/12/2023	0.25	230.00	57.50
	04/17/2023	0.25	230.00	57.50
	04/20/2023	2.00	230.00	460.00
Total: PROJECT PROFESSIONAL		2.75		632.50

SENIOR PRINCIPAL

AUSTIN, LISA	04/12/2023	1.50	300.00	450.00
	04/20/2023	1.50	300.00	450.00
Total: SENIOR PRINCIPAL		3.00		900.00

Total Task : 03) RMP

Task Labor

1,532.50

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	04/13/2023	0.25	175.00	43.75
	04/14/2023	0.75	175.00	131.25
	04/28/2023	1.50	175.00	262.50
Total: SENIOR STAFF PROFESSIONAL		2.50		437.50

PROJECT PROFESSIONAL

WELSH, LISA	04/05/2023	0.25	230.00	57.50
	04/12/2023	0.75	230.00	172.50
	04/19/2023	0.75	230.00	172.50
	04/24/2023	0.75	230.00	172.50
	04/25/2023	0.50	230.00	115.00
	04/26/2023	1.50	230.00	345.00
	04/27/2023	0.50	230.00	115.00
	04/28/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		5.50		1,265.00

SENIOR PRINCIPAL

AUSTIN, LISA	04/05/2023	0.50	300.00	150.00
	04/19/2023	1.00	300.00	300.00
Total: SENIOR PRINCIPAL		1.50		450.00

Total Task : 05) TRASH MONITORING PLAN

Task Labor

2,152.50

Task : 06) LID MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROFESSIONAL				
URIAS, HORACIO	04/11/2023	1.00	200.00	200.00
PROJECT PROFESSIONAL				
WELSH, LISA	04/03/2023	0.25	230.00	57.50
	04/05/2023	0.75	230.00	172.50
	04/06/2023	0.50	230.00	115.00

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/07/2023	0.25	230.00	57.50
	04/11/2023	3.00	230.00	690.00
	04/12/2023	1.75	230.00	402.50
	04/13/2023	6.50	230.00	1,495.00
	04/14/2023	0.75	230.00	172.50
	04/16/2023	1.00	230.00	230.00
	04/17/2023	0.25	230.00	57.50
	04/18/2023	0.50	230.00	115.00
	04/19/2023	0.50	230.00	115.00
	04/20/2023	1.25	230.00	287.50
	04/21/2023	1.25	230.00	287.50
	04/22/2023	0.75	230.00	172.50
	04/25/2023	0.25	230.00	57.50
	04/26/2023	0.25	230.00	57.50
	04/27/2023	0.25	230.00	57.50
	04/28/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		20.50		4,715.00

PRINCIPAL

PERKINS, RINTA	04/14/2023	1.75	280.00	490.00
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SENIOR PRINCIPAL

AUSTIN, LISA	04/04/2023	0.75	300.00	225.00
	04/05/2023	1.00	300.00	300.00
	04/06/2023	0.50	300.00	150.00
	04/11/2023	2.50	300.00	750.00
	04/12/2023	2.50	300.00	750.00
	04/13/2023	1.00	300.00	300.00
	04/14/2023	1.00	300.00	300.00
	04/17/2023	0.50	300.00	150.00
	04/18/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		10.25		3,075.00

Total Task : 06) LID MONITORING PLAN**Task Labor****8,480.00****Task : 07) POC MONITORING SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/05/2023	0.25	230.00	57.50
	04/26/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		0.50		115.00

Total Task : 07) POC MONITORING SUPPORT**Task Labor****115.00****Task : 09) ON CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	04/04/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL				

Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/04/2023	0.25	230.00	57.50
	04/06/2023	0.25	230.00	57.50
	04/14/2023	0.25	230.00	57.50
	04/24/2023	0.25	230.00	57.50
	04/27/2023	0.25	230.00	57.50
	04/28/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.75		402.50

SENIOR PRINCIPAL

AUSTIN, LISA	04/14/2023	0.50	300.00	150.00
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Total Task : 09) ON CALL SUPPORT

Task Labor

597.50**Total Phase : 01) TASK 17 MONITORING SUPPORT**

Phase Labor

18,957.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 03) OLD INDUSTRIAL CONTROL MEASURE

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
GALLO, ELIZABETH	04/03/2023	0.50	175.00	87.50
YAO, GRACE	04/04/2023	2.00	175.00	350.00
	04/05/2023	0.50	175.00	87.50
	04/11/2023	0.50	175.00	87.50
	04/12/2023	1.50	175.00	262.50
	04/13/2023	1.50	175.00	262.50
	04/14/2023	0.25	175.00	43.75
Total: SENIOR STAFF PROFESSIONAL		6.75		1,181.25

PROJECT PROFESSIONAL

WELSH, LISA	04/04/2023	0.25	230.00	57.50
	04/05/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		0.50		115.00

SENIOR PRINCIPAL

AUSTIN, LISA	04/05/2023	0.25	300.00	75.00
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Total Task : 03) OLD INDUSTRIAL CONTROL MEASURE

Task Labor

1,371.25**Task : 05) OTHER C11 C12 SUBPROVISIONS**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	04/14/2023	0.25	175.00	43.75
	04/15/2023	0.50	175.00	87.50
	04/19/2023	1.00	175.00	175.00
	04/20/2023	1.25	175.00	218.75
	04/21/2023	0.25	175.00	43.75
Total: SENIOR STAFF PROFESSIONAL		3.25		568.75

PROJECT PROFESSIONAL

WELSH, LISA	04/14/2023	0.25	230.00	57.50
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Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/19/2023	0.25	230.00	57.50
	04/20/2023	0.25	230.00	57.50
	04/24/2023	0.50	230.00	115.00
	04/25/2023	1.75	230.00	402.50
Total: PROJECT PROFESSIONAL		3.00		690.00
PRINCIPAL				
PERKINS, RINTA	04/24/2023	0.50	280.00	140.00
Total Task : 05) OTHER C11 C12 SUBPROVISIONS			Task Labor	1,398.75

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	04/04/2023	0.25	230.00	57.50
	04/06/2023	0.25	230.00	57.50
	04/14/2023	0.25	230.00	57.50
	04/18/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.00		230.00
SENIOR PROFESSIONAL				
HAVENS, KELLY	04/21/2023	1.50	255.00	382.50
	04/26/2023	0.25	255.00	63.75
	04/27/2023	0.50	255.00	127.50
Total: SENIOR PROFESSIONAL		2.25		573.75
PRINCIPAL				
PERKINS, RINTA	04/27/2023	0.50	280.00	140.00
	04/27/2023	1.00	280.00	280.00
Total: PRINCIPAL		1.50		420.00
Total Task : 06) ON CALL SUPPORT			Task Labor	1,223.75

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP			Phase Labor	3,993.75
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Total Project Labor 22,951.25

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023 22,951.25



Environmental and Public Health Engineering
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Oakland Office

March 2, 2023

Anita Franklin
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 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0123

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: January 2023

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 33,573.00	\$ 17,334.50	\$ 50,907.50	\$ 14,092.50
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 15,436.75	\$ 5,976.00	\$ 21,412.75	\$ 31,697.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 16,799.25	\$ 4,950.50	\$ 21,749.75	\$ 18,250.25
					\$ 158,110.00	\$ 65,809.00	\$ 28,261.00	\$ 94,070.00	\$ 64,040.00

TOTAL DUE \$ 28,261.00

Okay to pay G33

Sg

EOA, Inc.
 Ray Goebel



Oakland Office

Sunnyvale Office

Environmental and Public Health Engineering
1410 Jackson Street
Oakland, CA 94612

March 2, 2023

Anita Franklin
Alameda County Flood Control & Water C.D.
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Hayward, CA 94544
Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-0123

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: January 2023

Labor

Total Staff Labor Costs	\$ 28,261.00

Subtotal Labor	\$ 28,261.00

Direct Expenses

Expenses	\$ 0

Subtotal Expenses	\$ 0

TOTAL DUE \$ 28,261.00

EOA Project Labor Cost Summary by Employee

Start Date: 1/1/2023
 End Date: 1/31/2023

Printed on: 2/28/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL222					
AL222:01 Trash Control Program Activities					
	Christopher Somm	8.00	X	\$301.00	= \$2,408.00
	Kristin Kerr	5.50	X	\$293.00	= \$1,611.50
	John Fusco	7.50	X	\$244.00	= \$1,830.00
	Ileana Alvarado	34.25	X	\$204.00	= \$6,987.00
	Nicola Cook	0.25	X	\$204.00	= \$51.00
	Katherine Woo	23.50	X	\$184.00	= \$4,324.00
	Lianne Fong	1.00	X	\$123.00	= \$123.00
	Task Total	80.00			\$17,334.50
	Project Total	80.00			\$17,334.50

Start Date: 1/1/2023
End Date: 1/31/2023

Printed on: 2/28/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL223					
AL223:01 Cost Reporting Framework					
	Jill Bicknell	13.00	X	\$293.00	= \$3,809.00
	Kristin Kerr	2.00	X	\$293.00	= \$586.00
	Ileana Alvarado	7.75	X	\$204.00	= \$1,581.00
	Task Total	22.75			\$5,976.00
	Project Total	22.75			\$5,976.00

Start Date: 1/1/2023
 End Date: 1/31/2023

Printed on: 2/28/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL224					
AL224:01 IIDC Subcommittee Assistance					
	Kristin Kerr	6.50	X	\$293.00	= \$1,904.50
	Eliza Perkins	2.00	X	\$184.00	= \$368.00
	Task Total	8.50			\$2,272.50
AL224:03 IIDC Training Assistance					
	Kristin Kerr	6.00	X	\$293.00	= \$1,758.00
	Eliza Perkins	5.00	X	\$184.00	= \$920.00
	Task Total	11.00			\$2,678.00
	Project Total	19.50			\$4,950.50

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0123

Work Description for January 2023

AL222 Trash Control Program Activities

- Attended ACCWP Strategic Planning Meeting on January 5th.
- Reviewed preliminary five-year budget for ACCWP Trash Subcommittee.
- Developed agenda and presentation for February 2nd AGOL Training.
- Prepared summary of ACCWP Trash Subcommittee activities and priorities for Trash Subcommittee Chair.
- Continued with development of the Regional Trash Impracticability Report.
- Provided technical support to Permittees on C.10 trash load reduction requirements.

AL223 Cost Reporting Framework

- For BAMSC Regional Project, completed first draft Framework and Guidance Manual and distributed them to countywide stormwater programs for review.
- Prepared agenda, prepared materials and facilitated January 18th ACCWP Cost Reporting Work Group meeting.
- Prepared January 18th meeting summary.

AL224 IIDC Program Assistance

- Provide updates and information for Management Committee meeting agenda
- Collected information from Subcommittee on inspection fees
- Collected information from Subcommittee on SB205 implementation
- Updated ACCWP Outreach Resource List with new website links
- Began registration process for Training Workshop
- Held ACCWP IIDC Training Work Group meeting and conducted follow-up
- Coordinated with Training Workshop speakers
- Began development of Training Workshop presentation



Environmental and Public Health Engineering
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Oakland Office

March 31, 2023

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 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0223

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: February 2023

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 50,907.50	\$ 4,076.00	54,983.50	\$ 10,016.50
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 21,412.75	\$ 8,382.00	29,794.75	\$ 23,315.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 21,749.75	\$ 9,346.75	31,096.50	\$ 8,903.50
AL225	IIDC-23-3	50201	F15W81	PM1a	\$ 6,900.00	\$ -	\$ 366.25	366.25	\$ 6,533.75
					\$ 165,010.00	\$ 94,070.00	\$ 22,171.00	116,241.00	\$ 48,769.00

TOTAL DUE \$ 22,171.00

Okay to pay G33
Sg

Ray Goebel
 EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
1410 Jackson Street
Oakland, CA 94612

Oakland Office

Sunnyvale Office

March 31, 2023

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AL22X-0223

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: February 2023

Labor

Total Staff Labor Costs	\$	22,171.00

Subtotal Labor	\$	22,171.00

Direct Expenses

Expenses	\$	0

Subtotal Expenses	\$	0

TOTAL DUE \$ 22,171.00

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0223

Work Description for February 2023

AL222 Trash Control Program Activities

- Prepared meeting summary for December Subcommittee meeting.
- Prepared presentation for and facilitated February 2nd AGOL Training.
- Discussed preliminary five-year budget for ACCWP Trash Subcommittee with Trash Subcommittee Chair on February 9th.
- Continued with development of the Regional Trash Impracticability Report.
- Provided technical support to Permittees on C.10 trash load reduction requirements.
- Provide updates and information for Management Committee meeting agenda.

AL223 Cost Reporting Framework

- Received and discussed ACCWP comments on the first draft BAMSC Regional Cost Reporting Framework and Guidance Manual.
- Completed the following tasks for the BAMSC Regional Cost Reporting Project:
 - Received and compiled all countywide program and permittee comments on the first draft products into a comment table.
 - Began making changes and adding features to the Framework and Guidance Manual to address the comments provided.
 - Held a meeting of the Regional Cost Reporting Work Group on February 27, 2023 to discuss comments received and get direction on cost reporting approach and product improvements.
- Provide updates and information for Management Committee meeting agenda.

AL224 IIDC Program Assistance

- Attended February 2nd AGOL Training and presented on PLDA inspection program.
- Attended February 2nd training on updating Clean Water Program website and updated IIDC Subcommittee calendar information on website
- Developed presentation for IIDC workshop
- Updated IIDC outreach material reference list
- Organized, facilitated and presented at February 23rd IIDC training workshop
- Drafted a Workshop Report, summarized evaluations received, provided certificates of completion to attendees and conducted other workshop follow-up tasks
- Provided past IIDC training workshop presentations for Vimeo website
- Responded to municipal staff questions and request for information
- Began developing March agenda packet
- Provided draft graffiti removal Tip Sheet to Subcommittee for review and comment

- Requested review and updates of Clean Water Program Spill Reporting webpage
- Provided updates and information for Management Committee meeting agenda and attend meeting
- Revised December and January invoices with new project summary format
- Overall invoice, project and contract management tasks

AL225 Regional Firefighting Discharges Work Group

- Provide new Task Order for work related to Regional Work Group
- Provide updates and information for Management Committee meeting agenda

EOA Project Labor Cost Summary by Employee

Start Date: 2/1/2023
 End Date: 2/28/2023

Printed on: 3/29/2023

Projects/Tasks	Employees	Hours	X	Rates	=	Costs
AL222						
AL222:01 Trash Control Program Activities						
	Christopher Somm	4.00	X	\$301.00	=	\$1,204.00
	John Fusco	6.25	X	\$244.00	=	\$1,525.00
	Ileana Alvarado	5.25	X	\$204.00	=	\$1,071.00
	Katherine Woo	1.50	X	\$184.00	=	\$276.00
Task Total		17.00				\$4,076.00
Project Total		17.00				\$4,076.00

Start Date: 2/1/2023
End Date: 2/28/2023

Printed on: 3/29/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL223						
AL223:01 Cost Reporting Framework						
	Jill Bicknell	11.50	X	\$293.00	=	\$3,369.50
	Kristin Kerr	0.50	X	\$293.00	=	\$146.50
	Heana Alvarado	23.25	X	\$204.00	=	\$4,743.00
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
	Task Total	36.25				\$8,382.00
	Project Total	36.25				\$8,382.00

Start Date: 2/1/2023
 End Date: 2/28/2023

Printed on: 3/29/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL224					
AL224:01 IHC Subcommittee Assistance					
	Kristin Kerr	15.25	X	\$293.00	= \$4,468.25
	Task Total	15.25			\$4,468.25
AL224:02 IHC Subcommittee Facilitation					
	Kristin Kerr	2.00	X	\$293.00	= \$586.00
	Task Total	2.00			\$586.00
AL224:03 IHC Training Assistance					
	Kristin Kerr	5.50	X	\$293.00	= \$1,611.50
	Ileana Alvarado	4.00	X	\$204.00	= \$816.00
	Eliza Perkins	7.50	X	\$184.00	= \$1,380.00
	Justin Huber	1.00	X	\$184.00	= \$184.00
	Alma Lynn Pinell	3.50	X	\$86.00	= \$301.00
	Task Total	21.50			\$4,292.50
	Project Total	38.75			\$9,346.75

Start Date: 2/1/2023
End Date: 2/28/2023

Printed on: 3/29/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL225						
AL225:01 Regional Firefighting Discharges WG						
	Kristin Kerr	1.25	X	\$293.00	=	\$366.25
		Task Total		1.25		\$366.25
		Project Total		1.25		\$366.25



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Oakland Office

April 26, 2023

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 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0323

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: March 2023

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 54,983.50	\$ 4,751.50	\$ 59,735.00	\$ 5,265.00
AL223	CW20-22-23	50201	F15W81	PM1	\$ 53,110.00	\$ 29,794.75	\$ 10,067.50	\$ 39,862.25	\$ 13,247.75
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 31,096.50	\$ 4,732.50	\$ 35,829.00	\$ 4,171.00
AL225	IIDC-23-3	50201	F15W81	PM1	\$ 6,900.00	\$ 366.25	\$ 1,173.75	\$ 1,540.00	\$ 5,360.00
					\$ 165,010.00	\$ 116,241.00	\$ 20,725.25	\$ 136,966.25	\$ 28,043.75

TOTAL DUE \$ 20,725.25

Okay to pay G33

Sg

EOA, Inc.
 Ray Goebel



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April 26, 2023

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AL22X-0323

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: March 2023

Labor

Total Staff Labor Costs	\$ 20,725.25

Subtotal Labor	\$ 20,725.25

Direct Expenses

Expenses	\$ 0

Subtotal Expenses	\$ 0

TOTAL DUE \$ 20,725.25

EOA Project Labor Cost Summary by Employee

Start Date: 3/1/2023
 End Date: 3/31/2023

Printed on: 4/24/2023

Projects/Tasks	Employees	Hours	X	Rates	=	Costs
AL222						
AL222:01 Trash Control Program Activities						
	Kristin Kerr	0.50	X	\$293.00	=	\$146.50
	John Fusco	6.75	X	\$244.00	=	\$1,647.00
	Ileana Alvarado	14.50	X	\$204.00	=	\$2,958.00
	Task Total	21.75				\$4,751.50
	Project Total	21.75				\$4,751.50

Start Date: 3/1/2023
End Date: 3/31/2023

Printed on: 4/24/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL223					
AL223:01 Cost Reporting Framework					
	Jill Bicknell	19.00	X	\$307.00	= \$5,833.00
	Kristin Kerr	1.50	X	\$293.00	= \$439.50
	Heana Alvarado	18.00	X	\$204.00	= \$3,672.00
	Lianne Fong	1.00	X	\$123.00	= \$123.00
	Task Total	39.50			\$10,067.50
	Project Total	39.50			\$10,067.50

Start Date: 3/1/2023
 End Date: 3/31/2023

Printed on: 4/24/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL224					
AL224:01 IHC Subcommittee Assistance					
	Kristin Kerr	5.25	X	\$293.00	= \$1,538.25
	Task Total	5.25			\$1,538.25
AL224:02 IHC Subcommittee Facilitation					
	Kristin Kerr	5.25	X	\$293.00	= \$1,538.25
	Eliza Perkins	9.00	X	\$184.00	= \$1,656.00
	Task Total	14.25			\$3,194.25
	Project Total	19.50			\$4,732.50

Start Date: 3/1/2023
End Date: 3/31/2023

Printed on: 4/24/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL225						
AL225:01 Regional Firefighting Discharges WG						
	Kristin Kerr	2.75	X	\$293.00	=	\$805.75
	Eliza Perkins	2.00	X	\$184.00	=	\$368.00
	Task Total	4.75				\$1,173.75
	Project Total:	4.75				\$1,173.75

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0323

Work Description for March 2023

AL222 Trash Control Program Activities

- Prepared for and attended March 15th Trash Subcommittee meeting.
- Conducted follow-up from March Trash Subcommittee meeting.
- Assisted with development of the Regional Trash Impracticability Report.
- Provided technical support to Permittees on C.10 trash load reduction requirements.
- Developed FY 23/24 budget
- Provided updates and information for Management Committee meeting agenda.

AL223 Cost Reporting Framework

- Compiled and responded to comments on the First Draft Cost Reporting Framework and Guidance Manual
- Developed Revised Draft Cost Reporting Framework and Guidance Manual and distributed them to countywide programs, including ACCWP, for review on March 31.
- Held a meeting with the ACCWP Cost Reporting Work Group on March 29.
- Developed FY 23/24 budget for this task.
- Provided updates and information for Management Committee meeting agenda.

AL224 IIDC Program Assistance

- Finalized agenda packet for March subcommittee meeting
- Organized and participated in March subcommittee meeting. Prepared Draft meeting summary.
- Finalized graffiti removal Tip Sheet
- Coordinated updates to Report a Spill webpage from subcommittee representatives
- Coordinated transition of subcommittee chair
- Surveyed subcommittee regarding SB205 implementation
- Develop FY 23/24 budget
- Provided past subcommittee chairs as requested by Policy committee
- Respond to municipal staff questions and requests
- Provide updates and information for Management Committee meeting agenda
- Reviewed invoices and prepared work summaries
- Began coordination of contract transfer to a new fiscal agent

AL225 Regional Firefighting Discharges Work Group

- Participated in March 14th Regional Firefighting Discharges Work Group
- Provided updates and information for Management Committee meeting agenda



Environmental and Public Health Engineering
 1410 Jackson Street
 Oakland, CA 94612

Oakland Office

June 8, 2023

Anita Franklin
 Alameda County Flood Control & Water C.D.
 399 Elmhurst Street
 Hayward, CA 94544
 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0423

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: April 2023

Alameda County Clean Water Program

EOA Job #	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 59,735.00	\$ 1,635.00	\$ 61,370.00	\$ 3,630.00
AL223	CW20-22-23	50201	F15W81	PM1	\$ 53,110.00	\$ 39,862.25	\$ 4,658.00	\$ 44,520.25	\$ 8,589.75
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 35,829.00	\$ 1,143.83	\$ 36,972.83	\$ 3,027.17
AL225	IIDC-23-3	50201	F15W81	PM1a	\$ 6,900.00	\$ 1,540.00	\$ 293.00	\$ 1,833.00	\$ 5,067.00
					\$ 165,010.00	\$ 136,966.25	\$ 7,729.83	\$ 144,696.08	\$ 20,313.92

TOTAL DUE \$ 7,729.83

EOA, Inc.
 Ray Goebel



Oakland Office

Sunnyvale Office

Environmental and Public Health Engineering
1410 Jackson Street
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June 8, 2023

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AL22X-0423

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: April 2023

Labor

Total Staff Labor Costs	\$	7,704.75
Subtotal Labor	\$	7,704.75

Direct Expenses

Expenses	\$	25.08
Subtotal Expenses	\$	25.08

TOTAL DUE \$ **7,729.83**

EOA Project Labor Cost Summary by Employee

Start Date: 4/1/2023
End Date: 4/30/2023

Printed on: 6/8/2023

Projects/Tasks	Employees	Hours		Rates	=	Costs
AL22						
AL222:01 Trash Control Program Activities						
	Kristin Kerr	1.00	X	\$293.00	=	\$293.00
	John Fusco	5.50	X	\$244.00	=	\$1,342.00
	Task Total:	6.50				\$1,635.00
AL223:01 Cost Reporting Framework						
	Jill Bicknell	5.75	X	\$307.00	=	\$1,765.25
	Kristin Kerr	0.75	X	\$293.00	=	\$219.75
	Ileana Alvarado	12.50	X	\$204.00	=	\$2,550.00
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
	Task Total:	20.00				\$4,658.00
AL224:01 IHDC Subcommittee Assistance						
	Kristin Kerr	2.50	X	\$293.00	=	\$732.50
	Task Total:	2.50				\$732.50
AL224:02 IHDC Subcommittee Facilitation						
	Kristin Kerr	0.25	X	\$293.00	=	\$73.25
	Eliza Perkins	1.00	X	\$184.00	=	\$184.00
	Alma Lynn Pinell	1.50	X	\$86.00	=	\$129.00
	Task Total:	2.75				\$386.25
AL225:01 Regional Firefighting Discharges WG						
	Kristin Kerr	1.00	X	\$293.00	=	\$293.00
	Task Total:	1.00				\$293.00
	Project Total:	32.75				\$7,704.75

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0423

Work Description for April 2023

AL222 Trash Control Program Activities

- Drafted Updated Long-Term Trash Load Reduction Plan Guidance Document to Chair
- Met with Subcommittee Chair to review approach for updating Plans
- Provided updates and information for Management Committee meeting agenda

AL223 Cost Reporting Framework

- Met with State Water Board STORMS staff on April 10 to receive an update on their cost reporting project and coordinate with Bay Area efforts
- Held informational meetings with Regional Water Board staff and EPA staff on April 12 and 25, respectively, to brief them on the status of the Bay Area Cost Reporting project and demonstrate the Framework Tool
- Began to organize comments received on the revised draft products
- Provided updates and information for Management Committee meeting agenda

AL224 IIDC Program Assistance

- Updated material on IIDC members only webpage
- Provided CASQA SB205 training survey to the Subcommittee
- Provided hardcopy outreach material as requested by municipal staff
- Coordinated with Alameda County Green Business contact to attend next IIDC meeting
- Responded to municipal staff questions and requests
- Provided updates and information for Management Committee meeting agenda and at the meeting.
- Reviewed invoices and prepared work summaries
- Began coordination of contract transfer to a new fiscal agent

AL225 Regional Firefighting Discharges Work Group

- Provided updates and information for Management Committee meeting agenda and at the meeting.



Environmental and Public Health Engineering
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Oakland Office

September 12, 2022

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Invoice # AL22X-0722

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: July 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL221	IIDC-22-1	50201	F15W81	CW3	\$ 40,000.00	\$ 38,769.43	\$ 416.00	\$ 39,185.43	\$ 814.57
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 9,734.00	\$ 1,159.00	\$ 10,893.00	\$ 54,107.00
					\$ 105,000.00	\$ 48,503.43	\$ 1,575.00	\$ 50,078.43	\$ 54,921.57

TOTAL DUE \$ 1,575.00

okay to pay G33

Sg


 EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
1410 Jackson Street
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Oakland Office

Sunnyvale Office

September 12, 2022

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AL22X-0722

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: July 2022

Labor

Total Staff Labor Costs	\$	1,575.00

Subtotal Labor	\$	1,575.00

Direct Expenses

Expenses	\$	0

Subtotal Expenses	\$	0

TOTAL DUE \$ 1,575.00

EOA Project Labor Cost Summary by Employee

Start Date: 7/1/2022
 End Date: 7/31/2022

Printed on: 8/23/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL221						
AL221:01 IIDC Subcommittee Assistance						
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
	Task Total	1.00				\$123.00
AL221:02 IIDC Subcommittee Facilitation						
	Kristin Kerr	1.00	X	\$293.00	=	\$293.00
	Task Total	1.00				\$293.00
	Project Total	2.00				\$416.00

Start Date: 7/1/2022
End Date: 7/31/2022

Printed on: 8/23/2022

Projects/Tasks	Employees	Hours		Rates	Costs
AL222					
AL222:01 Trash Control Program Activities					
	John Fusco	4.75	X	\$244.00	= \$1,159.00
		Task Total		4.75	\$1,159.00
		Project Total		4.75	\$1,159.00



Environmental and Public Health Engineering
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Oakland Office

September 29, 2022

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Invoice # AL22X-0822

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: September 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL221	IIDC-22-1	50201	F15W81	CW3	\$ 40,000.00	\$ 39,185.43	\$ 732.50	\$ 39,917.93	\$ 82.07
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 10,893.00	\$ 1,379.75	\$ 12,272.75	\$ 52,727.25
AL222	Trash-22-1	50201	F15W81	CW6	Credit for Duplicate Labor charged		\$ (439.50)		
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ -	\$ 805.75	\$ 805.75	\$ 52,304.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ -	\$ 2,441.25	\$ 2,441.25	\$ 37,558.75
					\$ 198,110.00	\$ 50,078.43	\$ 4,919.75	\$ 55,437.68	\$ 142,672.32

Credit Double Charge

TOTAL DUE \$ 4,919.75

okay to pay G33

Sg

EOA, Inc.
 Ray Goebel

EOA Project Labor Cost Summary by Employee

Start Date: 8/1/2022
 End Date: 8/31/2022

Printed on: 9/28/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL221						
AL221:02 IDC Subcommittee Facilitation						
	Kristin Kerr	2.50	X	\$293.00	=	\$732.50
Task Total		2.50				\$732.50
Project Total		2.50				\$732.50

Start Date: 8/1/2022
End Date: 8/31/2022

Printed on: 9/28/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL222						
AL222:01 Trash Control Program Activities						
	Kristin Kerr	0.75	X	\$293.00	=	\$219.75
	John Fusco	4.25	X	\$244.00	=	\$1,037.00
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
	Task Total	6.00				\$1,379.75
	Project Total	6.00				\$1,379.75

Start Date: 8/1/2022
End Date: 8/31/2022

Printed on: 9/28/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL223						
AL223:01 Cost Reporting Framework						
	Jill Bicknell	2.50	X	\$293.00	=	\$732.50
	Kristin Kerr	0.25	X	\$293.00	=	\$73.25
	Task Total	2.75				\$805.75
	Project Total:	2.75				\$805.75

Start Date: 8/1/2022
 End Date: 8/31/2022

Printed on: 9/28/2022

Projects/Tasks	Employees	Hours		Rates	=	Costs
AL224						
AL224:01 IDC Subcommittee Assistance						
	Kristin Kerr	2.25	X	\$293.00	=	\$659.25
	Eliza Perkins	6.50	X	\$184.00	=	\$1,196.00
	Task Total	8.75				\$1,855.25
AL224:02 IDC Subcommittee Facilitation						
	Kristin Kerr	2.00	X	\$293.00	=	\$586.00
	Task Total	2.00				\$586.00
	Project Total	10.75				\$2,441.25



Environmental and Public Health Engineering
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Oakland Office

October 25, 2022

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Invoice # AL22X-0922

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: September 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 11,833.25	\$ 4,381.25	\$ 16,214.50	\$ 48,785.50
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 805.75	\$ 879.00	\$ 1,684.75	\$ 51,425.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 2,441.25	\$ 4,583.00	\$ 7,024.25	\$ 32,975.75
					\$ 158,110.00	\$ 15,080.25	\$ 9,843.25	\$ 24,923.50	\$ 133,186.50

TOTAL DUE \$ 9,843.25

okay to pay G33

EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
1410 Jackson Street
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Oakland Office

Sunnyvale Office

October 25, 2022

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Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-0922

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: September 2022

Labor

Total Staff Labor Costs	\$	9,843.25

Subtotal Labor	\$	9,843.25

Direct Expenses

Expenses	\$	0

Subtotal Expenses	\$	0

TOTAL DUE \$ **9,843.25**

EOA Project Labor Cost Summary by Employee

Start Date: 9/1/2022
 End Date: 9/30/2022

Printed on: 10/21/2022

Projects/Tasks	Employees	Hours	X	Rates	=	Costs
AL222						
AL222:01 Trash Control Program Activities						
	Kristin Kerr	0.25	X	\$293.00	=	\$73.25
	John Fusco	9.00	X	\$244.00	=	\$2,196.00
	Ileana Alvarado	9.75	X	\$204.00	=	\$1,989.00
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
Task Total		20.00				\$4,381.25
Project Total		20.00				\$4,381.25

Start Date: 9/1/2022
End Date: 9/30/2022

Printed on: 10/21/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL223						
AL223:01 Cost Reporting Framework						
	Jill Bicknell	3.00	X	\$293.00	=	\$879.00
		Task Total		3.00		\$879.00
		Project Total		3.00		\$879.00

Start Date: 9/1/2022
 End Date: 9/30/2022

Printed on: 10/21/2022

Projects/Tasks	Employees	Hours		Rates	Costs
AL224					
AL224:01 IIDC Subcommittee Assistance					
	Kristin Kerr	4.00	X	\$293.00	= \$1,172.00
	Eliza Perkins	5.00	X	\$184.00	= \$920.00
	Task Total	9.00			\$2,092.00
AL224:02 IIDC Subcommittee Facilitation					
	Kristin Kerr	6.00	X	\$293.00	= \$1,758.00
	Eliza Perkins	4.00	X	\$184.00	= \$736.00
	Task Total	10.00			\$2,494.00
	Project Total	19.00			\$4,586.00



Environmental and Public Health Engineering
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December 1, 2022

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Invoice # AL22X-1022

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: October 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 16,214.50	\$ 4,918.50	21,133.00	\$ 43,867.00
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 1,684.75	\$ 3,511.50	5,196.25	\$ 47,913.75
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 7,024.25	\$ 1,906.25	8,930.50	\$ 31,069.50
					\$ 158,110.00	\$ 24,923.50	\$ 10,336.25	35,259.75	\$ 122,850.25

TOTAL DUE \$ 10,336.25

okay to pay G33

Sg

EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
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Oakland Office

Sunnyvale Office

December 1, 2022

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AL22X-1022

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: October 2022

Labor

Total Staff Labor Costs	\$ 10,336.25

Subtotal Labor	\$ 10,336.25

Direct Expenses

Expenses	\$ 0

Subtotal Expenses	\$ 0

TOTAL DUE \$ 10,336.25

EOA Project Labor Cost Summary by Employee

Start Date: 10/1/2022
 End Date: 10/31/2022

Printed on: 11/29/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL222						
AL222:01 Trash Control Program Activities						
	Christopher Somm	3.00	X	\$301.00	=	\$903.00
	Kristin Kerr	2.50	X	\$293.00	=	\$732.50
	John Fusco	3.25	X	\$244.00	=	\$793.00
	Ileana Alvarado	9.50	X	\$204.00	=	\$1,938.00
	Katherine Woo	3.00	X	\$184.00	=	\$552.00
Task Total		21.25				\$4,918.50
Project Total		21.25				\$4,918.50

Start Date: 10/1/2022
End Date: 10/31/2022

Printed on: 11/29/2022

Projects/Tasks	Employees	Hours		Rates	Costs
AL223					
AL223:01 Cost Reporting Framework					
	Jill Bicknell	4.50	X	\$293.00	= \$1,318.50
	Ileana Alvarado	10.75	X	\$204.00	= \$2,193.00
	Task Total	15.25			\$3,511.50
	Project Total:	15.25			\$3,511.50

Start Date: 10/1/2022
 End Date: 10/31/2022

Printed on: 11/29/2022

Projects/Tasks	Employees	Hours		Rates		Costs
AL224						
AL224:01 IIDC Subcommittee Assistance						
	Kristin Kerr	3.75	X	\$293.00	=	\$1,098.75
	Eliza Perkins	2.00	X	\$184.00	=	\$368.00
	Task Total	5.75				\$1,466.75
AL224:02 IIDC Subcommittee Facilitation						
	Kristin Kerr	1.50	X	\$293.00	=	\$439.50
	Task Total	1.50				\$439.50
	Project Total	7.25				\$1,906.25



Environmental and Public Health Engineering
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Oakland Office

December 27, 2022

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Invoice # AL22X-1122

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: November 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 21,133.00	\$ 2,938.00	\$ 24,071.00	\$ 40,929.00
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 5,196.25	\$ 3,760.00	\$ 8,956.25	\$ 44,153.75
AL224	IIDC-23-2	50201	F15W81	CW63	\$ 40,000.00	\$ 8,930.50	\$ 5,228.25	\$ 14,158.75	\$ 25,841.25
					\$ 158,110.00	\$ 35,259.75	\$ 11,926.25	\$ 47,186.00	\$ 110,924.00

okay to pay G33

TOTAL DUE \$ 11,926.25

Sg

EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
1410 Jackson Street
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Oakland Office

Sunnyvale Office

December 27, 2022

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Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-1122

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: November 2022

Labor

Total Staff Labor Costs	\$ 11,926.25
Subtotal Labor	\$ 11,926.25

Direct Expenses

Expenses	\$ 0
Subtotal Expenses	\$ 0

TOTAL DUE \$ 11,926.25

EOA Project Labor Cost Summary by Employee

Start Date: 11/1/2022
 End Date: 11/30/2022

Printed on: 12/22/2022

Projects/Tasks	Employees	Hours	X	Rates	=	Costs
AL222						
AL222:01 Trash Control Program Activities						
	John Fusco	0.25	X	\$244.00	=	\$61.00
	Ileana Alvarado	12.75	X	\$204.00	=	\$2,601.00
	Katherine Woo	1.50	X	\$184.00	=	\$276.00
	Task Total	14.50				\$2,938.00
	Project Total	14.50				\$2,938.00

Start Date: 11/1/2022
End Date: 11/30/2022

Printed on: 12/22/2022

Projects/Tasks	Employees	Hours		Rates	Costs
AL223					
AL223:01 Cost Reporting Framework					
	Jill Bicknell	5.00	X	\$293.00	= \$1,465.00
	Ileana Alvarado	11.25	X	\$204.00	= \$2,295.00
	Task Total	16.25			\$3,760.00
	Project Total:	16.25			\$3,760.00

Start Date: 11/1/2022
 End Date: 11/30/2022

Printed on: 12/22/2022

Projects/Tasks	Employees	Hours		Rates	Costs
AL224					
AL224:01 IIDC Subcommittee Assistance					
	Kristin Kerr	6.25	X	\$293.00	= \$1,831.25
	Eliza Perkins	7.50	X	\$184.00	= \$1,380.00
	Task Total	13.75			\$3,211.25
AL224:02 IIDC Subcommittee Facilitation					
	Kristin Kerr	3.75	X	\$293.00	= \$1,098.75
	Task Total	3.75			\$1,098.75
AL224:03 IIDC Training Assistance					
	Kristin Kerr	1.25	X	\$293.00	= \$366.25
	Eliza Perkins	3.00	X	\$184.00	= \$552.00
	Task Total	4.25			\$918.25
	Project Total	21.75			\$5,228.25



Environmental and Public Health Engineering
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January 30, 2023

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 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-1222

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: December 2022

Alameda County Clean Water Program

EOA Jo	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 24,071.00	\$ 9,502.00	\$ 33,573.00	\$ 31,427.00
AL223	CW20-22-2	50201	F15W81	PM1	\$ 53,110.00	\$ 8,956.25	\$ 6,480.50	\$ 15,436.75	\$ 37,673.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 14,158.75	\$ 2,640.50	\$ 16,799.25	\$ 23,200.75
					\$ 158,110.00	\$ 47,186.00	\$ 18,623.00	\$ 65,809.00	\$ 92,301.00

TOTAL DUE \$ 18,623.00

okay to pay G33

Sg

EOA, Inc.
 Ray Goebel



Environmental and Public Health Engineering
1410 Jackson Street
Oakland, CA 94612

Oakland Office

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January 30, 2023

Anita Franklin
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Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-1222

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: December 2022

Labor

Total Staff Labor Costs	\$ 18,623.00

Subtotal Labor	\$ 18,623.00

Direct Expenses

Expenses	\$ 0

Subtotal Expenses	\$ 0

TOTAL DUE \$ 18,623.00

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-1222

Work Description for December 2022

AL222 Trash Control Program Activities

- Prepare for and attend December Subcommittee meeting.
- Conduct follow-up from December Subcommittee meeting including preparing draft meeting summary.
- Assist with development of the Regional Trash Impracticability Report.
- Provided technical support to Permittees on C.10 trash load reduction requirements.

AL223 Cost Reporting Framework

- BAMSC Project of Regional Benefit Tasks
 - Continued to work on development of the Draft Cost Reporting Framework and Guidance Manual.
 - Coordinated and held the third BAMSC Regional Cost Reporting Work Group meeting on December 8, 2022.

AL224 IIDC Program Assistance

- Follow-up actions from ACCWP IIDC Training Work Group meeting on 11/29
- Follow-up with potential guest speakers for training
- Finalize small construction site contractors Tip Sheet
- Draft graffiti removal BMPs into Tip Sheet format
- Survey subcommittee regarding inspection fees
- Respond to municipal staff questions

EOA Project Labor Cost Summary by Employee

Start Date: 12/1/2022
 End Date: 12/31/2022

Printed on: 1/26/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL222					
AL222:01 Trash Control Program Activities					
	John Fusco	11.75	X	\$244.00	= \$2,867.00
	Ileana Alvarado	8.50	X	\$204.00	= \$1,734.00
	Nicola Cook	1.25	X	\$204.00	= \$255.00
	Katherine Woo	18.25	X	\$184.00	= \$3,358.00
	William Pearce	7.00	X	\$184.00	= \$1,288.00
	Task Total	46.75			\$9,502.00
	Project Total	46.75			\$9,502.00

Start Date: 12/1/2022
End Date: 12/31/2022

Printed on: 1/26/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL223						
AL223:01 Cost Reporting Framework						
	Jill Bicknell	11.50	X	\$293.00	=	\$3,369.50
	Ileana Alvarado	15.25	X	\$204.00	=	\$3,111.00
	Task Total	26.75				\$6,480.50
	Project Total:	26.75				\$6,480.50

Start Date: 12/1/2022
End Date: 12/31/2022

Printed on: 1/26/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL224						
AL224:01 IIDC Subcommittee Assistance						
	Kristin Kerr	5.25	X	\$293.00	=	\$1,538.25
	Eliza Perkins	1.50	X	\$184.00	=	\$276.00
	Task Total	6.75				\$1,814.25
AL224:03 IIDC Training Assistance						
	Kristin Kerr	1.25	X	\$293.00	=	\$366.25
	Eliza Perkins	2.50	X	\$184.00	=	\$460.00
	Task Total	3.75				\$826.25
	Project Total	10.50				\$2,640.50

For: As Needed GIS Support Services FY2021-2022 - UR 1051066
 Psomas Project No. 4ALA010232

Professional Personnel

	Hours	Rate	Amount	
GIS/Application Developer	5.00	196.97	984.85	
Totals	5.00		984.85	
Total Labor				984.85

Billing Limits

	Current	Prior	To-Date
Total Billings	984.85	6,046.85	7,031.70
Limit			30,000.00
Remaining			22,968.30

Total this Project **\$984.85**

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Labor	984.85	6,046.85	7,031.70
Totals	984.85	6,046.85	7,031.70

Project Name: Clean Water Program

Report Period: August 1, 2022 – August 31, 2021

Date Prepared: October 3, 2022

Alameda County Project Reference: UR 1054027

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010233

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Meetings to review action items and develop punch list items and priorities
- Hayward TCD and Drainage Area new data process and incorporation
- Fremont reporting support
- C3 application QA and user documentation update

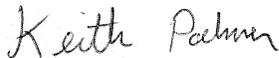
PLANNED ACTIVITIES FOR NEXT MONTH

- None.

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

For: As Needed GIS Support Services FY2021-2022 - UR 1051066
 Psomas Project No. 4ALA010232

Professional Personnel

	Hours	Rate	Amount	
GIS/Application Developer	6.00	196.97	1,181.82	
Totals	6.00		1,181.82	
Total Labor				1,181.82

Billing Limits

	Current	Prior	To-Date	
Total Billings	1,181.82	7,031.70	8,213.52	
Limit			30,000.00	
Remaining			21,786.48	
			Total this Project	\$1,181.82

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Labor	1,181.82	7,031.70	8,213.52
Totals	1,181.82	7,031.70	8,213.52

Project Name: Clean Water Program

Report Period: September 1, 2022 – September 30, 2021

Date Prepared: November 1, 2022

Alameda County Project Reference: UR 1054027

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010233

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- C3 application QA and user documentation update
- Review User Documentation Needs for C10 & C3 training.
- Data extract request from Michael Sinor of San Leandro.

PLANNED ACTIVITIES FOR NEXT MONTH

- None.

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

Project Name: Clean Water Program

Report Period: July 1, 2022 – July 30, 2021

Date Prepared: August 31, 2022

Alameda County Project Reference: UR 1054027

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010233

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Meetings to review action items and develop punch list items and priorities
- Time estimates on punch list items
- Training planning
- PLDA App updates
- Export Dublin data layers for EOC per Shannon's request
- Configure data for PLDA updates.
- Create data editing map service
- PLDA App updates

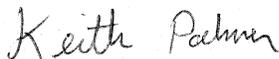
PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- C.3 Web App training.

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



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For: 2021-2022 Clean Water Program PLDA and Data Support - UR 1054027
 Psomas Project No. 4ALA010233

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Project Director	3.00	247.61	742.83
GIS/Application Developer	8.00	196.97	1,575.76
Totals	11.00		2,318.59
Total Labor			2,318.59

	Current	Prior	To-Date
Billing Limits			
Total Billings	2,318.59	21,562.03	23,880.62
Limit			23,895.00
Remaining			14.38
Total this Task			\$2,318.59

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	6.00	196.97	1,181.82
Senior GIS Specialist	.50	163.20	81.60
Totals	6.50		1,263.42
Total Labor			1,263.42

	Current	Prior	To-Date
Billing Limits			
Total Billings	1,263.42	1,742.61	3,006.03
Limit			7,840.00
Remaining			4,833.97
Total this Task			\$1,263.42

Task 00003 System Maintenance and Support

Professional Personnel

	Hours	Rate	Amount
Project Director	3.00	247.61	742.83
GIS/Application Developer	11.00	196.97	2,166.67
Totals	14.00		2,909.50
Total Labor			2,909.50

	Current	Prior	To-Date
Billing Limits			
Total Billings	2,909.50	0.00	2,909.50
Limit			3,016.00
Remaining			106.50
Total this Task			\$2,909.50

Total this Project \$6,491.51

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Labor	6,491.51	23,304.64	29,796.15
Totals	6,491.51	23,304.64	29,796.15

For: 2021-2022 Clean Water Program PLDA and Data Support - UR 1054027
 Psomas Project No. 4ALA010233

 Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount	
Senior GIS Specialist	9.00	163.20	1,468.80	
Totals	9.00		1,468.80	
Total Labor				1,468.80

Billing Limits

	Current	Prior	To-Date	
Total Billings	1,468.80	3,006.03	4,474.83	
Limit			7,840.00	
Remaining			3,365.17	

Total this Task \$1,468.80

Total this Project \$1,468.80

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Labor	1,468.80	29,796.15	31,264.95
Totals	1,468.80	29,796.15	31,264.95

Project Name: Clean Water Program

Report Period: August 1, 2022 – August 31, 2021

Date Prepared: October 3, 2022

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Meetings to review action items and develop punch list items and priorities
- Training planning
- Configure data for PLDA updates.
- Export data to EOA for Dublin per Shannon's request
- Fix issue with C3 Inspection report cause by ESRI AGS limitations

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

Project Name: Clean Water Program

Report Period: December 1, 2022 – December 30, 2021

Date Prepared: January 25, 2022

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Merge PLDA data into TCDDA layer.
- Update apps and web maps to use merged PLDA data.
- ACCWP workgroup meeting.
- Alameda City TCD and TCDDA data replacement

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- MeetingsW

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Senior GIS Specialist	3.00	163.20	489.60
Totals	3.00		489.60
Total Labor			489.60

Billing Limits

	Current	Prior	To-Date
Total Billings	489.60	13,869.40	14,359.00
Limit			14,598.00
Remaining			239.00
Total this Task			\$489.60

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	14.00	196.97	2,757.58
Totals	14.00		2,757.58
Total Labor			2,757.58

Billing Limits

	Current	Prior	To-Date
Total Billings	2,757.58	10,208.67	12,966.25
Limit			19,150.00
Remaining			6,183.75
Total this Task			\$2,757.58

Total this Project \$3,247.18

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Fee	0.00	7,900.00	7,900.00
Labor	3,247.18	33,307.22	36,554.40
Totals	3,247.18	41,207.22	44,454.40
Total this Invoice			\$5,807.79

Outstanding Invoices

Number	Date	Balance
188514	9/29/2022	11,035.27
189563	10/26/2022	32,872.66
189861	11/8/2022	4,102.54
190853	12/6/2022	5,481.39
Total Outstanding		53,491.86
Account Balance		\$59,299.65

Project Name: Clean Water Program

Report Period: February 1, 2023 – February 28, 2023

Date Prepared: March 26, 2023

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- ACCWP meetings.
- Help Elizabeth Frantz @ S2S setup AGOL users. Export PLDA data to John Fusco for Dublin
- Debug Trash App report based on issues identified by Elise.

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Senior GIS Specialist	4.00	163.20	652.80
Totals	4.00		652.80
Total Labor			652.80

Billing Limits

	Current	Prior	To-Date
Total Billings	652.80	13,359.95	14,012.75
Limit			14,598.00
Remaining			585.25
Total this Task			\$652.80

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	14.50	196.97	2,856.07
Totals	14.50		2,856.07
Total Labor			2,856.07

Billing Limits

	Current	Prior	To-Date
Total Billings	2,856.07	7,648.06	10,504.13
Limit			19,150.00
Remaining			8,645.87
Total this Task			\$2,856.07

Task 00003 System Maintenance and Support

Professional Personnel

	Hours	Rate	Amount
Project Director	9.00	247.61	2,228.49
Totals	9.00		2,228.49
Total Labor			2,228.49

Billing Limits

	Current	Prior	To-Date
Total Billings	2,228.49	18,862.42	21,090.91
Limit			33,134.00
Remaining			12,043.09
Total this Task			\$2,228.49

Total this Project \$5,737.36

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Fee	0.00	7,900.00	7,900.00
Labor	5,737.36	31,970.43	37,707.79
Totals	5,737.36	39,870.43	45,607.79
Total this Invoice			\$6,623.73

Project Name: Clean Water Program

Report Period: January 1, 2023 – January 31, 2023

Date Prepared: March 02, 2023

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- ACCWP Workgroup meeting.
- Historic PDA data research.
- Help Elizabeth Frantz @ S2S setup AGOL users. Export PLDA data to John Fusco for Dublin
- Fix filter issue with TCD layer that was preventing some TCD and inlet points from displaying.
- Revise SOW for remainder of FY.

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- MeetingsW

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



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For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Senior GIS Specialist	1.50	163.20	244.80
Totals	1.50		244.80
Total Labor			244.80

	Current	Prior	To-Date	
Billing Limits				
Total Billings	244.80	14,359.00	14,603.80	
Limit			14,598.00	
Adjustment				-5.80
Total this Task				\$239.00

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	4.00	196.97	787.88
Totals	4.00		787.88
Total Labor			787.88

	Current	Prior	To-Date	
Billing Limits				
Total Billings	787.88	12,966.25	13,754.13	
Limit			19,150.00	
Remaining			5,395.87	
Total this Task				\$787.88

Task 00003 System Maintenance and Support

Professional Personnel

	Hours	Rate	Amount
Project Director	7.00	247.61	1,733.27
Totals	7.00		1,733.27
Total Labor			1,733.27

	Current	Prior	To-Date	
Billing Limits				
Total Billings	1,733.27	17,129.15	18,862.42	
Limit			33,134.00	
Remaining			14,271.58	
Total this Task				\$1,733.27

Total this Project \$2,760.15

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date	
Fee	0.00	7,900.00	7,900.00	
Labor	2,760.15	36,554.40	39,314.55	
Totals	2,760.15	44,454.40	47,214.55	
Total this Invoice				\$6,798.04

Project Name: Clean Water Program

Report Period: March 1, 2023 – March 31, 2023

Date Prepared: May 8, 2023

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- ACCWP meetings.
- Debug PLDA editing issue for Jim Scanlin
- Update Stored Procedure to auto populate PLDA score on inspections and PLDA TCDDA polygons. Update Trash report for PLDA polygons.
- Write new Task Order.

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Project Director	1.00	247.61	247.61
Senior GIS Specialist	1.50	163.20	244.80
Totals	2.50		492.41
Total Labor			492.41

Billing Limits

	Current	Prior	To-Date
Total Billings	492.41	14,012.75	14,505.16
Limit			14,598.00
Remaining			92.84
Total this Task			\$492.41

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	15.00	196.97	2,954.55
Totals	15.00		2,954.55
Total Labor			2,954.55

Billing Limits

	Current	Prior	To-Date
Total Billings	2,954.55	10,504.13	13,458.68
Limit			19,150.00
Remaining			5,691.32
Total this Task			\$2,954.55

Task 00003 System Maintenance and Support

Professional Personnel

	Hours	Rate	Amount
Project Director	5.00	247.61	1,238.05
Totals	5.00		1,238.05
Total Labor			1,238.05

Billing Limits

	Current	Prior	To-Date
Total Billings	1,238.05	21,090.91	22,328.96
Limit			33,134.00
Remaining			10,805.04
Total this Task			\$1,238.05

Total this Project \$4,685.01

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Fee	0.00	7,900.00	7,900.00
Labor	4,685.01	37,707.79	42,392.80
Totals	4,685.01	45,607.79	50,292.80

Project Name: Clean Water Program

Report Period: November 1, 2022 – November 30, 2021

Date Prepared: December 27, 2022

Alameda County Project Reference: UR 1072481

Alameda County PM Contact: Sharon Gosselin

Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Merge PLDA data into TCDDA layer.
- Update apps and web maps to use merged PLDA data.
- ACCWP subcommittee meeting.

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Senior GIS Specialist	1.00	163.20	163.20
Totals	1.00		163.20
Total Labor			163.20

Billing Limits

	Current	Prior	To-Date
Total Billings	163.20	13,706.20	13,869.40
Limit			14,598.00
Remaining			728.60
Total this Task			\$163.20

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	8.00	196.97	1,575.76
Totals	8.00		1,575.76
Total Labor			1,575.76

Billing Limits

	Current	Prior	To-Date
Total Billings	1,575.76	8,632.91	10,208.67
Limit			19,150.00
Remaining			8,941.33
Total this Task			\$1,575.76

Total this Project \$1,738.96

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Fee	0.00	7,900.00	7,900.00
Labor	1,738.96	31,568.26	33,307.22
Totals	1,738.96	39,468.26	41,207.22
Total this Invoice			\$5,481.39

Outstanding Invoices

Number	Date	Balance
187476	8/25/2022	8,871.96
188514	9/29/2022	11,035.27
189563	10/26/2022	32,872.66
189861	11/8/2022	4,102.54
Total Outstanding		56,882.43
Account Balance		\$62,363.82

Project Name: Clean Water Program
Report Period: October 1, 2022 – October 31, 2021
Date Prepared: November 30, 2022
Alameda County Project Reference: UR 1072481
Alameda County PM Contact: Sharon Gosselin
Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Fix C.3 Inspection report to highlight polygon properly. Issue with ESRI Rest API that limits the # of vertices for a polygon.
- Test PLDA App for demo. Review PLDA logic, process, inspection, and reporting and meet with ACCWP staff.
- Setup Field users for Dublin.
- ACCWP subcommittee meeting.

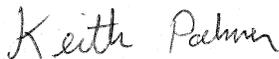
PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings
- Deploy PLDA merged drainage area data and app updates.

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



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Project Manager

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For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	5.00	196.97	984.85
Senior GIS Specialist	1.00	163.20	163.20
Totals	6.00		1,148.05
Total Labor			1,148.05

	Current	Prior	To-Date
Billing Limits			
Total Billings	1,148.05	12,558.15	13,706.20
Limit			14,598.00
Remaining			891.80
Total this Task			\$1,148.05

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	3.00	196.97	590.91
Senior GIS Specialist	1.00	163.20	163.20
Totals	4.00		754.11
Total Labor			754.11

	Current	Prior	To-Date
Billing Limits			
Total Billings	754.11	7,878.80	8,632.91
Limit			19,150.00
Remaining			10,517.09
Total this Task			\$754.11

Task 00003 System Maintenance and Support

Professional Personnel

	Hours	Rate	Amount
Project Director	6.50	247.61	1,609.47
Totals	6.50		1,609.47
Total Labor			1,609.47

	Current	Prior	To-Date
Billing Limits			
Total Billings	1,609.47	15,519.68	17,129.15
Limit			33,134.00
Remaining			16,004.85
Total this Task			\$1,609.47

Total this Project \$3,511.63

Billings to Date

	Current Billing	Prior Billing	Total Billed To Date
Fee	0.00	7,900.00	7,900.00
Labor	3,511.63	28,056.63	31,568.26
Totals	3,511.63	35,956.63	39,468.26
Total this Invoice			\$4,102.54

Project Name: Clean Water Program
Report Period: August 1, 2022 – August 31, 2021
Date Prepared: October 3, 2022
Alameda County Project Reference: UR 1072481
Alameda County PM Contact: Sharon Gosselin
Psomas Project Number: 4ALA010236

CURRENT PERIOD PROJECT STATUS

Providing enhancements to the Alameda County Cleanwater Program

WORK ACCOMPLISHED DURING PAST PERIOD

- Meeting with Jim, Alex, and Shannon to discuss Drainage Area layer in C.3 and Trash Apps. Update Trash app to add C.3 Projects that are Full Trash Capture equivalent. C3 AGOL Training.
- Finish C.3 Field Maps web maps per feedback from Jim and Shannon
- Finish C.3 Facility Inspection report based on feedback.
- Review San Leandro Trash report and try to identify differences between 20-21 and 21-22 reports. Test all apps for training.
- Fix C.3 Inspection report to highlight polygon property. Issue with ESRI Rest API that limits the # of vertices for a polygon.
- C3 and C10 training. User data questions and support.

PLANNED ACTIVITIES FOR NEXT MONTH

- Support CWP users
- Meetings

ISSUES AND COMMENTS:

- None

For any questions, please contact me at (206) 503-3836 or keith.palmer@psomas.com



Keith Palmer
Project Manager

1650 Spruce St
Ste 400
Riverside, CA 92507
951.787.8421
Fax 951.682.3379

www.psomas.com

For: 2022-2023 Clean Water Program GIS Support Services - UR 1072481
 Psomas Project No. 4ALA010236

Task 00001 Application Enhancements

Professional Personnel

	Hours	Rate	Amount
Project Director	2.00	247.61	495.22
GIS/Application Developer	47.50	196.97	9,356.08
Senior GIS Specialist	9.00	163.20	1,468.80
Totals	58.50		11,320.10
Total Labor			11,320.10

	Current	Prior	To-Date
Billing Limits			
Total Billings	11,320.10	1,238.05	12,558.15
Limit			14,598.00
Remaining			2,039.85
Total this Task			\$11,320.10

Task 00002 Data Management

Professional Personnel

	Hours	Rate	Amount
GIS/Application Developer	9.00	196.97	1,772.73
Totals	9.00		1,772.73
Total Labor			1,772.73

	Current	Prior	To-Date
Billing Limits			
Total Billings	1,772.73	6,106.07	7,878.80
Limit			19,150.00
Remaining			11,271.20
Total this Task			\$1,772.73

Task 00003 System Maintenance and Support

Fee

	Fee	% Comp	Earned	Previous Fee Billing	Current Fee Billing
Server Hosting Fee	7,900.00	100.00	7,900.00	0.00	7,900.00
Total Fee	7,900.00		7,900.00	0.00	7,900.00
Total Fee					7,900.00

Professional Personnel

	Hours	Rate	Amount
Project Director	26.00	247.61	6,437.86
GIS/Application Developer	6.00	196.97	1,181.82
Totals	32.00		7,619.68
Total Labor			7,619.68

	Current	Prior	To-Date
Billing Limits			
Total Billings	15,519.68	0.00	15,519.68
Limit			33,134.00
Remaining			17,614.32
Total this Task			\$15,519.68

Total this Project \$28,612.51



Protecting Alameda County Creeks, Wetlands & the Bay

October 17, 2022

399 Elmhurst St.
Hayward, CA
94544
p. 510-670-5543

Marylou Ayupan
Director of Public Works
City of Union City
34009 Alvarado Niles Road
Union City, CA 94587

SUBJECT: INVOICE FOR ALAMEDA COUNTYWIDE CLEAN
WATER PROGRAM COSTS FOR FISCAL YEAR 2022/23

MEMBER AGENCIES:

Alameda
Albany
Berkeley
Dublin
Emeryville
Fremont
Hayward
Livermore
Newark
Oakland
Piedmont
Pleasanton
San Leandro
Union City
County of Alameda
Alameda County Flood
Control and Water
Conservation District
Zone 7 Water Agency

Dear Ms. Ayupan:

Please find the attached invoice for your city's share of the Alameda Countywide Clean Water Program Costs for FY 2022/23. The invoice is based on the attached cost allocation. If you have any questions, please contact me at (510) 670-6547.

Sincerely yours,

Sharon Gosselin
Sharon Gosselin
Management Committee Chair

Attachments 2

THE COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
FISCAL DIVISION
399-A Elmhurst Street, 3rd Floor
Hayward, CA 94544
Tax ID 946000501

INVOICE 22M10:14
October 17, 2022

Customer No: 1316
CITY OF UNION CITY
Attn: MARYLOU AYUPAN
34009 ALVARDO NILES ROAD
UNION CITY, CA 94587

Description of Services

Coverage Period: 07/01/2022 - 06/30/2023

ALAMEDA COUNTYWIDE CLEAN WATER PROGRAM CONTRIBUTION,
ANNUAL INVOICE FY 2022/2023 \$134,608.00

Please make remittance payable to "Treasurer of Alameda County"

Please expedite payment so that it can be received by November 30, 2022.

Send to: Alameda County Public Works Agency
Fiscal Division
399-A Elmhurst Street
Hayward, CA 94544

Revenue Account No: 270301-459520-50201 \$134,608.00

Invoice Total: 134,608.00

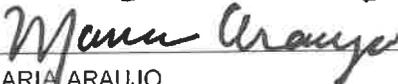
PLEASE MAKE REMITTANCE PAYABLE TO "TREASURER OF ALAMEDA COUNTY"

SEND TO THE ABOVE ADDRESS

PLEASE REFERENCE ABOVE INVOICE # ON PAYMENT

PAYMENT DUE UPON RECEIPT

The undersigned hereby certifies that the above claim is true and correct.



MARIA ARAUJO (510) 670-6452

**Alameda Countywide Clean Water Program Charges for Fiscal Year
2022/23**

Member Agency	Cost Share %	Obligation	Adjustment (+/-)	Invoice Amount
Alameda	4.42%	\$ 112,047		\$ 112,047
Alameda County	10.77%	\$ 273,020		\$ 273,020
Albany	1.85%	\$ 46,898		\$ 46,898
Berkeley	5.13%	\$ 130,046		\$ 130,046
Dublin	3.42%	\$ 86,697		\$ 86,697
Emeryville	1.69%	\$ 42,842		\$ 42,842
Fremont*	14.03%	\$355,661	-\$142,166	\$213,495
Hayward	10.14%	\$ 257,049		\$ 257,049
Livermore	6.09%	\$ 154,381		\$ 154,381
Newark	3.45%	\$ 87,457		\$ 87,457
Oakland	18.51%	\$ 469,228		\$ 469,228
Piedmont	1.80%	\$ 45,630		\$ 45,630
Pleasanton	5.64%	\$ 142,974		\$ 142,974
San Leandro	5.15%	\$ 130,552		\$ 130,552
Union City	5.31%	\$ 134,608		\$ 134,608
ACFCD	1.30%	\$ 32,955		\$ 32,955
Zone 7	1.30%	\$ 32,955		\$ 32,955
TOTAL	100%	\$ 2,535,000	-\$142,166	\$2,392,834

Adjustment represent FY 2022/2023 credit of \$179,336. to the City of Fremont for contracted legal services as approved in budget by the Program Management Committee on May 25, 2022 and prior year (FY2021/2022) credit balance of \$37,170 credited back to ACCWP

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

June 26, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #30
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$44,638.63
	Invoice #30 Total	\$44,638.63



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

June 13, 2023

Project No. - Invoice No: 00436.14-30

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 5/31/2023

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	9.00	224.00	\$2,016.00
Mathews, Sandra	19.00	315.00	\$5,985.00
Total Labor			\$8,001.00
Total This Task			\$8,001.00

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	16.50	315.00	\$5,197.50
Smith, Rebecca	2.50	190.00	\$475.00
Total Labor			\$5,672.50
Total This Task			\$5,672.50

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	6.50	315.00	\$2,047.50
Total Labor			\$2,047.50
Total This Task			\$2,047.50

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	18.00	126.00	\$2,268.00
Mathews, Sandra	6.50	315.00	\$2,047.50
Warren, Rachel	11.75	260.00	\$3,055.00
Total Labor			\$7,370.50
Total This Task			\$7,370.50

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	7.25	260.00	\$1,885.00
Total Labor			\$1,885.00
Total This Task			\$1,885.00

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	1.00	260.00	\$260.00
Total Labor			\$260.00
Total This Task			\$260.00

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	1.50	126.00	\$189.00
Yin, Elizabeth	.25	260.00	\$65.00
Total Labor			\$254.00
Total This Task			\$254.00

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
6/7/2023 Geosyntec Consultants Inv. #514207	5,532.50	1.100	\$6,085.75
Total Consultants			\$6,085.75
Total This Task			\$6,085.75

Larry Walker Associates Team

Progress Report for Work in May 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Prepared and finalized the Management Committee and PLS agenda packages.
- Participated in the May Management Committee and PLS meetings.
- Prepared and distributed action items and summaries for the Management Committee and PLS meetings.
- Prepared agenda, meeting notes, and participated in the Planning and Budget workgroup meeting.
- Prepared progress report.

Task 14.2 MC/PLS As-needed Support

- Updated the ACCWP website and SharePoint site.
- Responded to public requests submitted via the website.
- Prepared electronic vote to approve pursuing a MRP 3 unfunded mandate test claim.
- Continued drafting the Management Committee roles and responsibilities document.
- Prepared list of MRP 3 provisions to include in a test claim.
- Distributed the customized the ACCWP annual report forms.
- Distributed the final work products from the PCBs Demolition Update regional project.
- Evaluated pursuit of a grant to develop the MRP required climate change plan.

TASK 14.3 BAMSC

- Prepared for and participated in the May BAMSC internal and external Steering Committee meetings.

Task 15 Annual Report (PRC2-22/23)

- Drafted the Program Annual Report template and distributed it to the subcommittee facilitators.
- Customized the permittee report forms for ACCWP.

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Prepared and finalized the Subcommittee agenda.
- Participated in the May Subcommittee meeting.
- Prepared the meeting summary.
- Updated the Subcommittee information for the Management Committee agenda.

Task 16.2 DMSC Program Support

- Coordinated with the Subcommittees.

Task 16.3 Data Management Plan

- Continued development of the ACCWP Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Drafted ACCWP MPC update for Management Committee meeting.
- Coordinated review of the BAMSC Trash Monitoring Plan and QAPP with the ACCWP MPC subcommittee.
- Reviewed proposed FY23-24 budget with AMS.
- Facilitated the May BAMSC MPC meeting, drafted the meeting summary.
- Participated in the BAMSC External Steering Committee meeting.
- Participated in the 2023 Annual RMP SPLWG meeting.
- Assisted the Program in planning for trash monitoring.
- Reviewed the BAMSC Trash Monitoring Plan.
- Participated in the Trash TAG Meeting #2.
- Submitted the ACCWP LID Monitoring Plan and the BAMSC LID Monitoring QAPP to the Regional Water Board.
- Uploaded the LID Monitoring Plan and QAPP to the ACCWP website.
- Coordinated with the project team.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Prepared schedule and outline for the ACCWP FY2022-23 Annual Report.
- Assisted the Program in PCBs in Bridges and Electrical Utilities and mercury recycling requirements.
- Participated in PCBs in Electrical Utilities Workgroup Meeting #1.
- Facilitated call with the Cities of Berkeley and Oakland to discuss Program support for their respective proposed regional projects.
- Coordinated with the project team.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Finalized the construction site program enhancements document.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

Task 20.2 As Needed Support

- Updated the NDS information for the Management Committee agenda.
- Responded to member information requests on C.3 implementation.
- Responded to SMCWPPP request to use the ACCWP Roads factsheet.

Task 20.3 Training

- Continued planning for the May 16, 2023, C.3 workshop.
- Prepared presentations for the workshop.
- Facilitated and presented sessions at the workshop.
- Began preparation of post workshop report.

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
CONSULTANT INVOICE #: 27
INVOICE DATE:

436.14
BILLING PERIOD: May 1-31, 2023
June 13, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
Contract No. 21344
For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$154,000.00	115,085.00	15,721.00	130,806.00	23,194.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$12,500.00	5,056.00	7,370.50	12,426.50	73.50
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$95,200.00	44,862.38	2,399.00	47,261.38	47,938.62
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	105,089.89	6,085.75	111,175.64	5,094.36
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	63,451.32	4,021.88	67,473.20	46,376.80
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	21,815.00	157.50	21,972.50	10,027.50
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	48,645.00	8,883.00	57,528.00	4,472.00
TOTALS					\$1,126,420.00	\$882,967.31	\$44,638.63	\$927,605.94	\$198,814.06



436.14
517
Task 17 \$5,532.50
Task 18 \$3,656.25
Total \$9,188.75

Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 514207
Project : CWR0649B
Invoice Date : 6/7/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 5/31/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$9,188.75
Current Invoice	\$9,188.75

****Amount Due This Invoice **** **\$9,188.75**

Statement

Prior Billings	\$154,081.75
Current Invoice	\$9,188.75
Billed To Date	\$163,270.50
Paid To Date	\$111,466.75

Statement

Project Budget	\$216,200.00
Expended to Date	\$163,270.50
Contract Balance	\$52,929.50
**Amount Due This Invoice **	\$9,188.75

When making payment via bank, please include our invoice number in ACH information; Please email invoice payment remittance/details to CorporateAR@Geosyntec.com.

Bank Details: Citibank N.A.
Coconut Creek Branch 0529
 4807 Coconut Creek Pkwy
 Coconut Creek, FL 33063

Account #: 2195223812
ABA/Routing: 067004764 (ACH)
Swift: CITI US 33

When making payment via check, please remit payment to: **Mail Code 11160**
P.O. Box 70280
Philadelphia, PA 19176-0280

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 01) ACCWP MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/15/2023	1.00	230.00	230.00
	05/22/2023	0.75	230.00	172.50
	05/23/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		2.00		460.00

Total Task : 01) ACCWP MPC

Task Labor

460.00

Task : 02) BAMSC MPC

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/02/2023	1.00	230.00	230.00
	05/03/2023	2.25	230.00	517.50
	05/19/2023	1.50	230.00	345.00
Total: PROJECT PROFESSIONAL		4.75		1,092.50

SENIOR PRINCIPAL

AUSTIN, LISA	05/17/2023	0.50	300.00	150.00
	05/25/2023	2.25	300.00	675.00
Total: SENIOR PRINCIPAL		2.75		825.00

Total Task : 02) BAMSC MPC

Task Labor

1,917.50

Task : 03) RMP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/23/2023	2.50	230.00	575.00
SENIOR PRINCIPAL				
AUSTIN, LISA	05/19/2023	1.25	300.00	375.00
	05/22/2023	0.25	300.00	75.00
	05/23/2023	2.50	300.00	750.00
Total: SENIOR PRINCIPAL		4.00		1,200.00

Total Task : 03) RMP

Task Labor

1,775.00

Task : 05) TRASH MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/01/2023	1.25	230.00	287.50
	05/04/2023	0.50	230.00	115.00
	05/22/2023	1.00	230.00	230.00
Total: PROJECT PROFESSIONAL		2.75		632.50

SENIOR PRINCIPAL

AUSTIN, LISA	05/22/2023	1.00	300.00	300.00
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Total Task : 05) TRASH MONITORING PLAN

Task Labor

932.50

Phase : 01) TASK 17 MONITORING SUPPORT

Task : 06) LID MONITORING PLAN

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL WELSH, LISA	05/01/2023	0.25	230.00	57.50

Total Task : 06) LID MONITORING PLAN

Task Labor

57.50

Task : 09) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR DUONG, DAVID	05/05/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL WELSH, LISA	05/03/2023	0.25	230.00	57.50
	05/10/2023	0.25	230.00	57.50
	05/12/2023	0.25	230.00	57.50
	05/15/2023	0.50	230.00	115.00
	05/24/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		1.50		345.00

Total Task : 09) ON CALL SUPPORT

Task Labor

390.00

Total Phase : 01) TASK 17 MONITORING SUPPORT

Phase Labor

5,532.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Task : 01) ANNUAL PROGRESS SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL YAO, GRACE	05/22/2023	0.25	175.00	43.75
PROJECT PROFESSIONAL WELSH, LISA	05/26/2023	0.50	230.00	115.00
SENIOR PRINCIPAL AUSTIN, LISA	05/26/2023	0.50	300.00	150.00

Total Task : 01) ANNUAL PROGRESS SUPPORT

Task Labor

308.75

Task : 05) OTHER C11 C12 SUBPROVISIONS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL YAO, GRACE	05/22/2023	0.25	175.00	43.75
	05/23/2023	1.00	175.00	175.00
	05/26/2023	0.25	175.00	43.75
	05/30/2023	0.25	175.00	43.75
Total: SENIOR STAFF PROFESSIONAL		1.75		306.25

PROJECT PROFESSIONAL

WELSH, LISA	05/01/2023	0.25	230.00	57.50
	05/02/2023	0.75	230.00	172.50
	05/04/2023	0.25	230.00	57.50
	05/10/2023	0.25	230.00	57.50
	05/11/2023	0.25	230.00	57.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/12/2023	0.25	230.00	57.50
	05/15/2023	0.50	230.00	115.00
	05/17/2023	0.75	230.00	172.50
	05/19/2023	0.50	230.00	115.00
	05/22/2023	0.50	230.00	115.00
	05/25/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		4.75		1,092.50
PRINCIPAL				
PERKINS, RINTA	05/04/2023	0.50	280.00	140.00
	05/08/2023	0.50	280.00	140.00
	05/15/2023	0.75	280.00	210.00
	05/16/2023	0.50	280.00	140.00
	05/22/2023	0.25	280.00	70.00
Total: PRINCIPAL		2.50		700.00
SENIOR PRINCIPAL				
AUSTIN, LISA	05/16/2023	0.50	300.00	150.00
Total Task : 05) OTHER C11 C12 SUBPROVISIONS			Task Labor	2,248.75

Task : 06) ON CALL SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	05/04/2023	0.75	230.00	172.50
	05/05/2023	0.50	230.00	115.00
	05/26/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		1.75		402.50
SENIOR PROFESSIONAL				
HAVENS, KELLY	05/05/2023	0.75	255.00	191.25
PRINCIPAL				
PERKINS, RINTA	05/05/2023	0.50	280.00	140.00
	05/08/2023	0.50	280.00	140.00
Total: PRINCIPAL		1.00		280.00
SENIOR PRINCIPAL				
AUSTIN, LISA	05/26/2023	0.75	300.00	225.00
Total Task : 06) ON CALL SUPPORT			Task Labor	1,098.75

Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

Phase Labor

3,656.25

Total Project Labor

9,188.75

Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023

9,188.75

1480 Drew Avenue, Suite 100
Davis, CA 95618

530.753.6400
530.753.7030 fax

www.lwa.com

July 20, 2023

Anita Franklin
Alameda Countywide Clean Water Program
And Water Conservation District
399 Elmhurst Street
Hayward, CA 94544



Re: Invoice #31
For Approval By Sharon Gosselin
Reference P.O. PBWKS 7573
Program #: 50201

Invoice Transmittal

LWA Project #	Description	
436.14	ACCW – Municipal Regional Stormwater Permit Compliance Services	\$50,608.25
	Invoice #31 Total	\$50,608.25



Alameda Countywide Clean Water Program
Attn: Sharon Gosselin
399 Elmhurst Street
Hayward, CA 94544

July 14, 2023

Project No. - Invoice No: 00436.14-31

MUNICIPAL REGIONAL STORMWATER PERMIT COMPLIANCE SERVICES

Project: 00436.14

PO # 7573

For Services Rendered Through 6/30/2023

Contract # 21344

Task: 14.1 MC/PLS Meeting Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Bardsley, Audra	2.75	224.00	\$616.00
Mathews, Sandra	10.75	315.00	\$3,386.25
Total Labor			\$4,002.25
Total This Task			\$4,002.25

Task: 14.2 MC/PLS As-needed Support (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Ashby, Karen	.50	315.00	\$157.50
Mathews, Sandra	47.25	315.00	\$14,883.75
Wilson, Nicole	.50	161.00	\$80.50
Total Labor			\$15,121.75
Total This Task			\$15,121.75

Task: 14.3 BAMSC (PRC1-22/23)

Professional Personnel

Employee	Hours	Rate	Amount
Mathews, Sandra	12.00	315.00	\$3,780.00
Total Labor			\$3,780.00

Total This Task \$3,780.00

Task: 15 2022-23 Annual Report (PRC2-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	.50	126.00	\$63.00
Total Labor			<u>\$63.00</u>
Total This Task			<u>\$63.00</u>

Task: 16.1 DMSC Subcommittee Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Yin, Elizabeth	7.00	260.00	\$1,820.00
Total Labor			<u>\$1,820.00</u>
Total This Task			<u>\$1,820.00</u>

Task: 16.2 DMSC Program Support (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	3.75	126.00	\$472.50
Mathews, Sandra	1.00	315.00	\$315.00
VanCarpels, Tina	1.00	135.00	\$135.00
Yin, Elizabeth	1.50	260.00	\$390.00
Total Labor			<u>\$1,312.50</u>
Total This Task			<u>\$1,312.50</u>

Task: 16.3 Data Management Plan (PRC3-22/23)

Professional Personnel

<u>Employee</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Celniker, Chloe	13.75	126.00	\$1,732.50
VanCarpels, Tina	1.00	135.00	\$135.00
Total Labor			<u>\$1,867.50</u>
Total This Task			<u>\$1,867.50</u>

Task: 17 Monitoring Support (MPC-23-1)

Consultants

<u>Payee</u>	<u>Cost</u>	<u>Markup</u>	<u>Amount</u>
Environmental Consultant			
7/7/2023 Geosyntec Consultants Inv. #517797	3,307.50	1.100	\$3,638.25
Total Consultants			<u>\$3,638.25</u>
Total This Task			<u>\$3,638.25</u>

Task: 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

Consultants

<u>Payee</u>		Cost	Markup	Amount
Environmental Consultant				
7/7/2023 Geosyntec Consultants	Inv. #517797	14,870.00	1.100	\$16,357.00
Total Consultants				\$16,357.00
Total This Task				\$16,357.00

Task: 20.2 On-Call Support

Professional Personnel

<u>Employee</u>		Hours	Rate	Amount
Mathews, Sandra		5.00	315.00	\$1,575.00
Total Labor				\$1,575.00
Total This Task				\$1,575.00

Task: 20.3 Trainings

Professional Personnel

<u>Employee</u>		Hours	Rate	Amount
Mathews, Sandra		1.00	315.00	\$315.00
McFadin, Sophie		6.00	126.00	\$756.00
Total Labor				\$1,071.00
Total This Task				\$1,071.00

Invoice Amount **\$50,608.25**

Billing Limits	Current	Prior	To-date
Total Billings	50,608.25	927,605.94	978,214.19
Limit			1,800,000.00
Remaining			821,785.81

Larry Walker Associates Team

Progress Report for Work in June 2023

Municipal Regional Stormwater Permit Compliance Services for the Alameda Countywide Clean Water Program (ACCWP)

Task 14 Management Committee and PLS Support (PRC1-22/23)

Task: 14.1 MC/PLS Meeting Support

- Prepared and finalized the Management Committee and PLS agenda packages.
- Participated in the June Management Committee and PLS meetings.
- Prepared and distributed action items and summaries for the Management Committee and PLS meetings.
- Reviewed invoices and prepared progress report.

Task 14.2 MC/PLS As-needed Support

- Updated the ACCWP website and SharePoint site.
- Responded to public requests submitted via the website.
- Prepared electronic vote to approve final Cost Reporting Framework and Guidance.
- Prepared supporting information for the unfunded mandate test claim.
 - Reviewed consultant invoices to develop estimates for the program costs by relevant sub-provisions included in the unfunded mandate test claim.
 - Drafted and finalized declaration of program costs.
 - Participated in meetings with the legal team to discuss the development of the costs and declaration.
- Distributed the revised sections of the customized the ACCWP annual report forms.
- Distributed the final work products from the Cost Reporting regional project.
- Distributed trash reporting instructions from the Regional Water Board.
- Set up the Management Committee and Policy Level Subcommittee 2023-2024 meetings.
- Responded to member questions on SMARTS reporting.
- Began evaluating creating a cross walk of the program budget for cost reporting.
- Began review of action plans and setting up tracking for program costs for FY 2023-2024.

TASK 14.3 BAMSC

- Prepared for and participated in the June BAMSC internal and external Steering Committee meetings.
- Reviewed and commented on the Regional Water Board draft SMARTS guide.
- Tracked and reported on BAMSC action items for the ACCWP Management Committee.
- Updated the SharePoint site with BAMSC agendas and meeting summaries.
- Coordinated with the workgroup focused on improving communication with Regional Water Board staff.

Task 15 Annual Report (PRC2-22/23)

- Tracked responses from subcommittee facilitators.

Task 16 Data Management Support (PRC3-22/23)

Task 16.1 DMSC Subcommittee Support

- Prepared and finalized the Subcommittee agenda.
- Participated in the June Subcommittee meeting.
- Prepared the meeting summary.
- Updated the Subcommittee information for the Management Committee agenda.
- Prepared the FY 2023-2024 meeting schedule.
- Finalized work plans for FY 2023-2024.

Task 16.2 DMSC Program Support

- Uploaded training videos to Vimeo.
- Participated in the C.17 workgroup.
- Staff support for subcommittee meeting.

Task 16.3 Data Management Plan

- Continued development of the ACCWP Information Management Plan.

Task 17 Monitoring Support (MPC-23-1)

- Participated in the BAMSC External Steering Committee meeting.
- Reviewed RMP projects.
- Assisted the Program in planning for trash monitoring.
- Revised the BAMSC Trash Monitoring Plan per TAG, stakeholder, and permittee comments.
- Participated in call with Regional Water Board on LID Monitoring Plan approval.
- Assisted the Program in planning for POCs monitoring.
- Drafted Section C.8 of the Program's Annual Report; coordinated with the project team; invoicing.

Task 18 C.11/C.12 Implementation Support (POC-IMP-23-1)

- Prepared PCBs in Building Demolition Applicable Structure data request.
- Prepared outline for the POCs Control Measure Update.
- Reviewed permittee annual report forms.
- Assisted the Program with planning for old industrial area/source property investigations.
- Assisted the Program in PCBs with the Bridges (all Permittees) and Electrical Utilities (City of Alameda) and mercury recycling requirements.
- Participated in PCBs in Electrical Utilities Workgroup Meeting #2.
- Assisted the City of Oakland with regional project funding support.
- Coordinated with the project team.

TASK 19 Regional Project Support (POC-Imp-23-2)

TASK 19.2 PCBs Demolition Guidance

- Finalized the construction site program enhancements document.

TASK 20 New Development Subcommittee Support (NDS 23-1)

Task 20.1 NDS Meetings

- Began planning for the July meeting.

Task 20.2 As Needed Support

- Updated the NDS information for the Management Committee agenda.
- Responded to member information requests on C.3 implementation.
- Responded to public inquiries on the C3TG.
- Tracked C3TG errata.
- Tracked proposed MRP C.3-related amendments.

Task 20.3 Training

- Processed workshop knowledge survey and evaluation results.
- Updated the workshop report based on feedback from the training workgroup.
- Shared training video with the DM-G subcommittee to upload to Vimeo.

Clean Water Program - Alameda County

CONSULTANT PROJECT CODES:
CONSULTANT INVOICE #: 31
INVOICE DATE:

436.14
BILLING PERIOD: June 1-30, 2023
July 14, 2023

ACCW - Municipal Regional Stormwater Permit Compliance Services
Contract No. 21344
For approval by Sharon Gosselin, Ref. P.O. PBWKS-7573
Program #: 50201

CWP TASK ID	TASK DESCRIPTION	Job/Work Order #	Activity Code	(Consultant) Project ID)	BUDGET (approved Action Plan)	PRIOR INVOICED AMOUNT	CURRENT INVOICE AMOUNT	CUMUL. INVOICE AMOUNT	BUDGET BALANCE
NDS-21-X	New Development Subcommittee Support	F15W81	CW2	436.14 - Task 1	\$60,000.00	61,369.75	-	61,369.75	(1,369.75)
POC-Imp-21-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 2	\$99,000.00	98,734.36	-	98,734.36	265.64
POC-Mon-21-1	POCs Monitoring Support	F15W81	CW5	436.14 - Task 3	\$22,000.00	22,127.88	-	22,127.88	(127.88)
POC-Imp-21-2	POCs Regional Projects Support	F15W81	CW7	436.14 - Task 4	\$11,000.00	1,925.00	-	1,925.00	9,075.00
PRC-22-1	SMARTS Support	F15W81	PM1	436.14 - Task 5	\$3,600.00	1,617.75	-	1,617.75	1,982.25
POCs-22-1	MRP 3 and PCBs Implementation Support	F15W81	CW7	436.14 - Task 6	\$99,000.00	89,148.38	-	89,148.38	9,851.62
MPC-22-1	Monitoring Support	F15W81	CW7	436.14 - Task 7	\$46,000.00	45,758.35	-	45,758.35	241.65
PRC-22-2	Management and PLS Support	F15W81	PM1	436.14 - Task 8	\$42,000.00	39,290.50	-	39,290.50	2,709.50
NDS-22-1	NDS Baseline and Project Support	F15W81	CW2	436.14 - Task 9	\$60,000.00	60,658.75	-	60,658.75	(658.75)
MM-22-3	GI SOP Development	F15W81	CW1	436.14 - Task 10	\$30,000.00	25,401.75	-	25,401.75	4,598.25
PRC-22-3	Annual Report Support	F15W81	PM1	436.14 - Task 11	\$20,000.00	20,673.25	-	20,673.25	(673.25)
PRC-22-4	Cost Reporting Framework	F15W81	PM1	436.14 - Task 12	\$20,000.00	3,042.00	-	3,042.00	16,958.00
PRC-22-5	Asset Management Framework	F15W81	PM1	436.14 - Task 13	\$28,000.00	9,215.00	-	9,215.00	18,785.00
PRC1-22/23	Management and PLS Support	F15W81	PM1	436.14 - Task 14	\$154,000.00	130,806.00	22,904.00	153,710.00	290.00
PRC2-22/23	2022-23 Annual Report	F15W81	PM1	436.14 - Task 15	\$12,500.00	12,426.50	63.00	12,489.50	10.50
PRC3-22/23	Data Management Support	F15W81	PM1	436.14 - Task 16	\$95,200.00	47,261.38	5,000.00	52,261.38	42,938.62
MPC-23-1	Monitoring Support	F15W81	CW7	436.14 - Task 17	\$116,270.00	111,175.64	3,638.25	114,813.89	1,456.11
POC-Imp-23-1	C.11/C.12 Implementation Support	F15W81	CW7	436.14 - Task 18	\$113,850.00	67,473.20	16,357.00	83,830.20	30,019.80
POC-Imp-23-2	Regional Project Support	F15W81	CW7	436.14 - Task 19	\$32,000.00	21,972.50	2,646.00	24,618.50	7,381.50
NDS-23-1	NDS Support	F15W81	CW2	436.14 - Task 20	\$62,000.00	57,528.00	-	57,528.00	4,472.00
TOTALS					\$1,126,420.00	\$927,605.94	\$50,608.25	\$978,214.19	\$148,205.81



Task 17	\$ 3,307.50
Task 18	\$ 14,870.00
Total	\$ \$18,177.50

Geosyntec Consultants, Inc.
 900 Broken Sound Parkway NW, Suite 200
 Boca Raton, Florida 33487-3575 USA
 Tel (561) 995-0900 Fax (561) 995-0925

LARRY WALKER ASSOCIATES
1480 DREW AVENUE
SUITE 100
DAVIS, CA 95618
Attention: SANDY MATHEWS

Invoice # : 517797
Project : CWR0649B
Invoice Date : 7/7/2023
Project Name : ACCWP ON CALL FY2022 2023

For Professional Services Rendered through transaction date: 6/30/2023

IF YOU HAVE QUESTIONS ABOUT THIS INVOICE, PLEASE CONTACT LISA WELSH

TASK ID NO. MPC-23-1
 TASK ID NO. POC-IMP-23-1
 TASK ID NO. MPC-23-2

Professional Services	\$18,177.50
Current Invoice	\$18,177.50

****Amount Due This Invoice ** \$18,177.50**

Statement

Prior Billings	\$163,270.50
Current Invoice	\$18,177.50
Billed To Date	\$181,448.00
Paid To Date	\$131,130.50

Statement

Project Budget	\$216,200.00
Expended to Date	\$181,448.00
Contract Balance	\$34,752.00
**Amount Due This Invoice **	\$18,177.50

When making payment via bank, please include our invoice number in ACH information; Please email invoice payment remittance/details to CorporateAR@Geosyntec.com.

Bank Details: Citibank N.A.
Coconut Creek Branch 0529
 4807 Coconut Creek Pkwy
 Coconut Creek, FL 33063

Account #: 2195223812
ABA/Routing: 067004764 (ACH)
Swift: CITI US 33

When making payment via check, please remit payment to: Mail Code 11160
P.O. Box 70280
Philadelphia, PA 19176-0280

Phase : 01) TASK 17 MONITORING SUPPORT**Task : 01) ACCWP MPC**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	06/01/2023	1.00	175.00	175.00
	06/02/2023	1.00	175.00	175.00
Total: SENIOR STAFF PROFESSIONAL		2.00		350.00

Total Task : 01) ACCWP MPC**Task Labor****350.00****Task : 02) BAMSC MPC**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	06/22/2023	1.00	300.00	300.00

Total Task : 02) BAMSC MPC**Task Labor****300.00****Task : 03) RMP**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PROFESSIONAL				
HAVENS, KELLY	06/21/2023	1.50	255.00	382.50
SENIOR PRINCIPAL				
AUSTIN, LISA	06/02/2023	0.25	300.00	75.00

Total Task : 03) RMP**Task Labor****457.50****Task : 05) TRASH MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
YAO, GRACE	06/09/2023	0.25	175.00	43.75
	06/13/2023	0.25	175.00	43.75
Total: SENIOR STAFF PROFESSIONAL		0.50		87.50

PROJECT PROFESSIONAL

WELSH, LISA	06/01/2023	0.25	230.00	57.50
	06/02/2023	0.25	230.00	57.50
	06/05/2023	0.25	230.00	57.50
	06/09/2023	0.25	230.00	57.50
	06/10/2023	1.25	230.00	287.50
	06/12/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		2.50		575.00

SENIOR PRINCIPAL

AUSTIN, LISA	06/07/2023	1.00	300.00	300.00
	06/09/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.25		375.00

Total Task : 05) TRASH MONITORING PLAN**Task Labor****1,037.50****Task : 06) LID MONITORING PLAN**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
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Phase : 01) TASK 17 MONITORING SUPPORT

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	06/05/2023	0.75	300.00	225.00
	06/09/2023	0.25	300.00	75.00
Total: SENIOR PRINCIPAL		1.00		300.00

Total Task : 06) LID MONITORING PLAN**Task Labor****300.00****Task : 07) POC MONITORING SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	06/01/2023	1.00	300.00	300.00

Total Task : 07) POC MONITORING SUPPORT**Task Labor****300.00****Task : 09) ON CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT ADMINISTRATOR				
DUONG, DAVID	06/07/2023	0.50	90.00	45.00
PROJECT PROFESSIONAL				
WELSH, LISA	06/01/2023	1.00	230.00	230.00
	06/07/2023	1.00	230.00	230.00
	06/16/2023	0.25	230.00	57.50
Total: PROJECT PROFESSIONAL		2.25		517.50

Total Task : 09) ON CALL SUPPORT**Task Labor****562.50****Total Phase : 01) TASK 17 MONITORING SUPPORT****Phase Labor****3,307.50****Phase : 02) TASK 18 POCS IMPLEMENTATION SUP****Task : 01) ANNUAL PROGRESS SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROFESSIONAL				
GALLO, ELIZABETH	06/02/2023	0.25	200.00	50.00
PROJECT PROFESSIONAL				
WELSH, LISA	06/01/2023	0.75	230.00	172.50
	06/02/2023	2.00	230.00	460.00
	06/04/2023	0.25	230.00	57.50
	06/05/2023	0.25	230.00	57.50
	06/07/2023	0.75	230.00	172.50
	06/08/2023	1.50	230.00	345.00
	06/11/2023	0.25	230.00	57.50
	06/15/2023	0.25	230.00	57.50
	06/20/2023	0.25	230.00	57.50
	06/22/2023	0.25	230.00	57.50
	06/26/2023	0.25	230.00	57.50
	06/30/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		7.50		1,725.00

SENIOR PRINCIPAL

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	06/01/2023	0.50	300.00	150.00
	06/05/2023	0.25	300.00	75.00
	06/05/2023	0.50	300.00	150.00
	06/06/2023	1.00	300.00	300.00
	06/07/2023	1.00	300.00	300.00
	06/08/2023	0.25	300.00	75.00
	06/09/2023	0.75	300.00	225.00
Total: SENIOR PRINCIPAL		4.25		1,275.00

Total Task : 01) ANNUAL PROGRESS SUPPORT Task Labor 3,050.00

Task : 02) SOURCE PROPERTY REFERRAL SUPPOR

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
PROJECT PROFESSIONAL				
WELSH, LISA	06/15/2023	0.50	230.00	115.00
SENIOR PRINCIPAL				
AUSTIN, LISA	06/14/2023	1.00	300.00	300.00
	06/15/2023	1.50	300.00	450.00
Total: SENIOR PRINCIPAL		2.50		750.00

Total Task : 02) SOURCE PROPERTY REFERRAL SUPPOR Task Labor 865.00

Task : 05) OTHER C11 C12 SUBPROVISIONS

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
MEYERS, EMILY	06/06/2023	0.50	175.00	87.50
	06/07/2023	0.75	175.00	131.25
	06/09/2023	2.75	175.00	481.25
	06/21/2023	1.50	175.00	262.50
	06/23/2023	4.00	175.00	700.00
	06/28/2023	0.50	175.00	87.50
Total: SENIOR STAFF PROFESSIONAL		10.00		1,750.00

PROJECT PROFESSIONAL				
WELSH, LISA	06/02/2023	0.25	230.00	57.50
	06/04/2023	0.75	230.00	172.50
	06/06/2023	1.25	230.00	287.50
	06/07/2023	0.75	230.00	172.50
	06/09/2023	0.25	230.00	57.50
	06/11/2023	0.75	230.00	172.50
	06/12/2023	1.00	230.00	230.00
	06/13/2023	0.50	230.00	115.00
	06/14/2023	0.50	230.00	115.00
	06/15/2023	0.25	230.00	57.50
	06/16/2023	0.25	230.00	57.50
	06/20/2023	0.75	230.00	172.50
Total: PROJECT PROFESSIONAL		7.25		1,667.50

Phase : 02) TASK 18 POCS IMPLEMENTATION SUP

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR PRINCIPAL				
AUSTIN, LISA	06/07/2023	0.75	300.00	225.00
	06/08/2023	0.50	300.00	150.00
	06/23/2023	0.25	300.00	75.00
	06/28/2023	0.50	300.00	150.00
Total: SENIOR PRINCIPAL		2.00		600.00

Total Task : 05) OTHER C11 C12 SUBPROVISIONS**Task Labor****4,017.50****Task : 06) ON CALL SUPPORT**

<u>Class / Employee Name</u>	<u>Date</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
SENIOR STAFF PROFESSIONAL				
MEYERS, EMILY	06/14/2023	3.00	175.00	525.00
	06/19/2023	2.00	175.00	350.00
	06/20/2023	0.50	175.00	87.50
	06/21/2023	0.50	175.00	87.50
	06/26/2023	0.25	175.00	43.75
	06/29/2023	0.75	175.00	131.25
Total: SENIOR STAFF PROFESSIONAL		7.00		1,225.00

PROJECT PROFESSIONAL

WELSH, LISA	06/01/2023	0.25	230.00	57.50
	06/02/2023	0.25	230.00	57.50
	06/06/2023	0.75	230.00	172.50
	06/09/2023	0.75	230.00	172.50
	06/13/2023	2.00	230.00	460.00
	06/14/2023	2.50	230.00	575.00
	06/15/2023	0.50	230.00	115.00
Total: PROJECT PROFESSIONAL		7.00		1,610.00

SENIOR PROFESSIONAL

HAVENS, KELLY	06/02/2023	0.50	255.00	127.50
	06/09/2023	1.00	255.00	255.00
	06/12/2023	0.25	255.00	63.75
	06/14/2023	0.75	255.00	191.25
	06/15/2023	0.50	255.00	127.50
	06/26/2023	1.75	255.00	446.25
	06/29/2023	0.75	255.00	191.25
Total: SENIOR PROFESSIONAL		5.50		1,402.50

SENIOR PRINCIPAL

AUSTIN, LISA	06/14/2023	2.25	300.00	675.00
	06/19/2023	0.50	300.00	150.00
	06/27/2023	0.75	300.00	225.00
	06/28/2023	5.50	300.00	1,650.00
Total: SENIOR PRINCIPAL		9.00		2,700.00

Total Task : 06) ON CALL SUPPORT**Task Labor****6,937.50****Total Phase : 02) TASK 18 POCS IMPLEMENTATION SUP****Phase Labor****14,870.00**

	Total Project Labor	18,177.50
Total Project: CWR0649B -- ACCWP ON CALL FY2022 2023		18,177.50



Environmental and Public Health Engineering
 1410 Jackson Street
 Oakland, CA 94612

Oakland Office

June 27, 2023

Anita Franklin
 Alameda County Flood Control & Water C.D.
 399 Elmhurst Street
 Hayward, CA 94544
 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0523

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: May 2023

Alameda County Clean Water Program

EOA Job #	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 61,370.00	\$ 1,704.25	\$ 63,074.25	\$ 1,925.75
AL223	CW20-22-23	50201	F15W81	PM1	\$ 53,110.00	\$ 44,520.25	\$ 6,452.50	\$ 50,972.75	\$ 2,137.25
AL224	IIDC-23-2	50201	F15W81	CW03	\$ 40,000.00	\$ 36,972.83	\$ 1,245.25	\$ 38,218.08	\$ 1,781.92
AL225	IIDC-23-3	50201	F15W81	PM1a	\$ 6,900.00	\$ 1,833.00	\$ 805.75	\$ 2,638.75	\$ 4,261.25
AL226	CW20-22-23	50201	F15W81	PM1	\$ 23,000.00	\$ -	\$ 18,512.00	\$ 18,512.00	\$ 4,488.00
					\$ 188,010.00	\$ 144,696.08	\$ 28,719.75	\$ 173,415.83	\$ 14,594.17

TOTAL DUE \$ 28,719.75

EOA, Inc.
 Ray Goebel

Okay to pay G33



Environmental and Public Health Engineering
1410 Jackson Street
Oakland, CA 94612

- Oakland Office
- Sunnyvale Office

June 27, 2023

Anita Franklin
Alameda County Flood Control & Water C.D.
399 Elmhurst Street
Hayward, CA 94544
Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-0523

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: May 2023

Labor

Total Staff Labor Costs	\$ 10,514.75
Subtotal Labor	\$ 10,514.75

Direct Expenses

Expenses (April and May)	\$ 18,205.00
Subtotal Expenses	\$ 18,205.00

TOTAL DUE \$ 28,719.75

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0523

Work Description for May 2023

AL222 Trash Control Program Activities

- Provided Updated Long-Term Trash Load Reduction Plan Guidance Document
- Worked with Subcommittee Chair to develop meeting agenda packet and organize May meeting
- Provide updates and information for Management Committee meeting agenda

AL223 Cost Reporting Framework

- Reviewed comments received on the revised draft Framework and Guidance Manual and prepared a response-to-comments table
- Began making revisions to the Framework and Guidance Manual to address comments received
- Provide updates and information for Management Committee meeting agenda

AL224 IIDC Program Assistance

- Prepared draft June Subcommittee agenda packet for Chair review
- Respond to municipal staff questions and requests
- Continued coordination of contract transfer to a new fiscal agent
- Provide updates and information for Management Committee meeting agenda.

AL225 Regional Firefighting Discharges Work Group

- Provide updates and information for Management Committee meeting.
- Reviewed invoices and prepared work summaries

AL226 BAHM Regional Updates

- Prepared Action Plan and set up process for ACCWP to participate in funding the BAHM Regional Updates project per the BAMS Collaborative project profile approved on 2-23-23.
- Oversaw subcontractor Clear Creek Solutions' work to update the model and User Manual.
- Conducted BAHM Regional Work Group meeting on May 18.

EOA Project Labor Cost Summary by Employee

Start Date: 5/1/2023
End Date: 5/31/2023

Printed on: 6/27/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL22						
AL222:01 Trash Control Program Activities						
	John Fusco	6.75	X	\$244.00	=	\$1,647.00
	Lauren Phillips	0.25	X	\$229.00	=	\$57.25
	Task Total:	7.00				\$1,704.25
AL223:01 Cost Reporting Framework						
	Jill Bicknell	12.00	X	\$307.00	=	\$3,684.00
	Kristin Kerr	0.50	X	\$293.00	=	\$146.50
	Ileana Alvarado	12.25	X	\$204.00	=	\$2,499.00
	Lianne Fong	1.00	X	\$123.00	=	\$123.00
	Task Total:	25.75				\$6,452.50
AL224:01 IIDC Subcommittee Assistance						
	Kristin Kerr	4.00	X	\$293.00	=	\$1,172.00
	Task Total:	4.00				\$1,172.00
AL224:02 IIDC Subcommittee Facilitation						
	Kristin Kerr	0.25	X	\$293.00	=	\$73.25
	Task Total:	0.25				\$73.25
AL225:01 Regional Firefighting Discharges WG						
	Kristin Kerr	2.75	X	\$293.00	=	\$805.75
	Task Total:	2.75				\$805.75
AL226:01 BAHM Regional Updates						
	Jill Bicknell	1.00	X	\$307.00	=	\$307.00
	Task Total:	1.00				\$307.00
	Project Total:	40.75				\$10,514.75

EOA, Inc.

1410 Jackson St.
Oakland, CA 946124010
Tel: (510) 832-2852

Expense Details

Printed on: 6/27/2023
Page 1 of 1

Filters Used:
- Expense Log Date: 4/1/2023 to 5/31/2023
- Project ID: AL222: to AL226:01
- Expense Log Billed: Selected Items (1)

Project ID-Name: AL226:01 - BAHM Regional Updates

Client ID: Alameda County - Alameda County Flood Control & Water C.D.

Date	Emp/Vendor	Reference	Description	Expense ID	Units	Cost
4/11/2023	ClearCreekSolutions		BAHM Software & Manual Update	Subcontractor:	1.00	\$1,800.00
4/28/2023	ClearCreekSolutions		BAHM Software & Manual Update	Subcontractor:	1.00	\$5,250.00
5/31/2023	ClearCreekSolutions		Bay Area Hydrology Model Software and User Manual Update	Subcontractor:	1.00	\$9,500.00

Billable Total: \$16,550.00

AL226:01 Total: \$16,550.00

Grand Billable Total: \$16,550.00

Invoice

Clear Creek Solutions, Inc.

8847 Marlene Ct. Sw.
 Olympia, WA 98512
 360-943-0304
 www.clearcreeksolutions.com
 FEIN 20-2380586

Date	Invoice #
4/28/2023	1746

Bill To:
EOA, Inc. 1410 Jackson St Oakland, CA 94612

Ship To:
EOA, Inc. 1410 Jackson St Oakland, CA 94612

P.O. No.	Terms	Due Date
		5/31/2023

Description	Qty	Rate	Amount
BAHM Subcontract Bay Area Hydrology Model Software and User Manual Update Billing Period: April 1, 2023 through April 30, 2023			
Joe Brascher, Senior Hydrologist, Scope Tasks 1, 3,4,5 and 6	60	200.00	12,000.00
Joe Brascher Jr, Junior Hydrologist, Scope Tasks 1, 3,4,5 and 6	60	150.00	9,000.00

<p>Approved for payment 5-23-23 Subcontractor CC08.12 \$5,250.00 SCV232.11 \$5,250.00 AL226.01 \$5,250.00 C/CAG \$5,250.00 (paid as vendor)</p>  <p>Please remit payment to Clear Creek Solutions, Inc., at the address above.</p>	Subtotal	\$21,000.00
	Sales Tax (0.0%)	\$0.00
	Total	\$21,000.00
	Payments/Credits	\$0.00
	Balance Due	\$21,000.00

Phone #
360-943-0304

Invoice

Clear Creek Solutions, Inc.

8847 Marlene Ct. Sw.
 Olympia, WA 98512
 360-943-0304
 www.clearcreeksolutions.com
 FEIN 20-2380586

Date	Invoice #
4/11/2023	1742

Bill To:
EOA, Inc. 1410 Jackson St Oakland, CA 94612

Ship To:
EOA, Inc. 1410 Jackson St Oakland, CA 94612

P.O. No.	Terms	Due Date
		4/11/2023

Description	Qty	Rate	Amount
BAHM Subcontract Bay Area Hydrology Model Software and User Manual Update Billing Period: March 1, 2023 through March 31, 2023			
Joe Brascher, Senior Hydrologist, Tasks 3.1, 4.1, 4.2, 4.3	24	200.00	4,800.00
Joe Brascher Jr, Junior Hydrologist, Task 4.2, 5.1	16	150.00	2,400.00

<p>Approved for payment 5-23-23 Subcontractor CC08.12 \$1,800.00 SCV232.11 \$1,800.00 AL226.01 \$1,800.00 C/CAG \$1,800.00 (paid as vendor)</p> <p><i>J.M.C. Bicknell</i></p> <p>Please remit payment to Clear Creek Solutions, Inc., at the address above.</p>	Subtotal	\$7,200.00
	Sales Tax (0.0%)	\$0.00
	Total	\$7,200.00
	Payments/Credits	\$0.00
	Balance Due	\$7,200.00

Phone #
360-943-0304

INVOICE



CLEAR CREEK SOLUTIONS, INC.
6200 Capitol Blvd SE
Tumwater, WA 98012-5847

brascher@clearcreeksolutions.com
+1 (360) 890-1728
Clear Creek Solutions

EOA, Inc.

Bill to

Jill Bicknell
EOA, Inc.
1410 Jackson St
Oakland, CA 94612

Ship to

Jill Bicknell
EOA, Inc.
EOA, Inc.
1410 Jackson St
Oakland, CA 94612

Invoice details

Invoice no.: 1753
Invoice date: 06/01/2023
Terms: Net 30
Due date: 07/01/2023

Product or service	Amount
1. BAHM Subcontract Bay Area Hydrology Model Software and User Manual Update Billing Period: May 1, 2023 through May 31, 2023	\$0.00
2. Services Joseph Brascher Sr.	100 × \$200.00 \$20,000.00
3. Services Joseph Brascher Jr.	120 × \$150.00 \$18,000.00
Total	\$38,000.00

Approved for payment 6-1-23
Subcontractor
CC08.12 \$9,500.00
SCV232.11 \$9,500.00
AL226.01 \$9,500.00
C/CAG \$9,500.00 (paid as vendor)



Environmental and Public Health Engineering
 1410 Jackson Street
 Oakland, CA 94612

Oakland Office

July 13, 2023

Anita Franklin
 Alameda County Flood Control & Water C.D.
 399 Elmhurst Street
 Hayward, CA 94544
 Attn: Sharon Gosselin - sharon@acpwa.org

Invoice # AL22X-0623

INVOICE FOR CONSULTING SERVICES- Contract#C-21382, PO# PBWKS-7574

Billing Period: June 2023

Alameda County Clean Water Program

EOA Job #	Task #	Program #	W.O.#	Activity#	Total Budget	Previous	Current Billed	Total Billed	Remaining
AL222	Trash-22-1	50201	F15W81	CW6	\$ 65,000.00	\$ 63,074.25	\$ 1,049.25	\$ 64,123.50	\$ 876.50
AL223	CW20-22-23	50201	F15W81	PM1	\$ 53,110.00	\$ 50,972.75	\$ 3,224.25	\$ 54,197.00	\$ (1,087.00)
AL224	IIDC-23-2	50201	F15W81	CWC3	\$ 40,000.00	\$ 38,218.08	\$ 1,758.00	\$ 39,976.08	\$ 23.92
AL225	IIDC-23-3	50201	F15W81	PM1	\$ 6,900.00	\$ 2,638.75	\$ 2,637.00	\$ 5,275.75	\$ 1,624.25
AL226	CW20-22-23	50201	F15W81	PM1	\$ 23,000.00	\$ 18,512.00	\$ 4,562.50	\$ 23,074.50	\$ (74.50)
					\$ 188,010.00	\$ 173,415.83	\$ 13,231.00	\$ 186,646.83	\$ 1,363.17

TOTAL DUE \$ 13,231.00

EOA, Inc.
 Ray Goebel

Okay to pay G33



Environmental and Public Health Engineering
1410 Jackson Street
Oakland, CA 94612

- Oakland Office
- Sunnyvale Office

July 13, 2023

Anita Franklin
Alameda County Flood Control & Water C.D.
399 Elmhurst Street
Hayward, CA 94544
Attn: Sharon Gosselin - sharon@acpwa.org

AL22X-0623

INVOICE FOR CONSULTING SERVICES - Contract #C-12788, PO# PBWKS-6231

Period: June 2023

Labor

Total Staff Labor Costs	\$ 9,436.00
Subtotal Labor	\$ 9,436.00

Direct Expenses

Expenses	\$ 3,795.00
Subtotal Expenses	\$ 3,795.00

TOTAL DUE \$ 13,231.00

EOA, Inc
Alameda County Clean Water Program – Contract #C-21382
EOA Invoice No. AL22X-0623

Work Description for June 2023

AL222 Trash Control Program Activities

- Respond to municipal staff questions and requests

AL223 Cost Reporting Framework

- Completed revisions to the Framework and Guidance Manual
- Distributed the final draft Framework and Guidance Manual to the countywide programs, including ACCWP, for approval
- Followed up with ACCWP to determine if a final ACCWP Work Group meeting was needed (meeting was determined to not be needed)
- Assisted the BAMS Collaborative with transmittal of the final approved Framework and Guidance Manual to the Water Board
- Provide updates and information for Management Committee meeting agenda

AL224 IIDC Program Assistance

- Finalized Agenda packet and attended June Subcommittee meeting. Prepared meeting summary and addressed follow-up action items.
- Continued coordination of contract transfer to a new fiscal agent

AL225 Regional Firefighting Discharges Work Group

- Attended June BAMSC Regional Work Group meeting
- Respond to municipal staff questions and requests
- Provide updates and information for Management Committee meeting
- Reviewed invoices and prepared work summaries

AL226 BAHM Regional Updates

- Oversaw subcontractor Clear Creek Solutions' work to complete model and User Manual updates.
- Developed summary of BAHM updates for Countywide FY 22-23 Annual Reports.
- Conducted BAHM Regional Work Group meeting on June 21.

INVOICE

Approved for payment 6-30-23
Subcontractor
CC08.12 \$3,450.00
SCV232.11 \$3,450.00
AL226.01 \$3,450.00
C/CAG \$3,450.00 (paid as vendor)



CLEAR CREEK SOLUTIONS, INC.
6200 Capitol Blvd SE
Tumwater, WA 98012-5847

brascher@clearcreeksolutions.com
+1 (360) 890-1728
Clear Creek Solutions

EOA, Inc.

Bill to

Jill Bicknell
EOA, Inc.
1410 Jackson St
Oakland, CA 94612

Ship to

Jill Bicknell
EOA, Inc.
EOA, Inc.
1410 Jackson St
Oakland, CA 94612

Invoice details

Invoice no.: 1759
Terms: Net 30
Invoice date: 06/29/2023
Due date: 07/29/2023

Product or service		Amount
1. Regional BAHM Updates Updates for the BAHM2023 model.	39 hrs × \$200.00	\$7,800.00
2. Regional BAHM Updates Updates for the BAHM2023 model.	40 hrs × \$150.00	\$6,000.00
	Total	\$13,800.00

EOA Project Labor Cost Summary by Employee

Start Date: 6/1/2023
 End Date: 6/30/2023

Printed on: 7/13/2023

Projects/Tasks	Employees	Hours	Rates	Costs
AL222				
AL222:01 Trash Control Program Activities				
	Kristin Kerr	0.25	X	\$293.00 = \$73.25
	John Fusco	4.00	X	\$244.00 = \$976.00
	Task Total	4.25		\$1,049.25
	Project Total	4.25		\$1,049.25

Start Date: 6/1/2023
End Date: 6/30/2023

Printed on: 7/13/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL223						
AL223:01 Cost Reporting Framework						
	Jill Bicknell	7.25	X	\$307.00	=	\$2,225.75
	Kristin Kerr	0.50	X	\$293.00	=	\$146.50
	Heana Alvarado	3.25	X	\$204.00	=	\$663.00
	Craig Johnson	1.50	X	\$126.00	=	\$189.00
	Task Total	12.50				\$3,224.25
	Project Total	12.50				\$3,224.25

Start Date: 6/1/2023
End Date: 6/30/2023

Printed on: 7/13/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL224						
AL224:01 IHC Subcommittee Assistance						
	Kristin Kerr	2.00	X	\$293.00	=	\$586.00
		Task Total		2.00		\$586.00
AL224:02 IHC Subcommittee Facilitation						
	Kristin Kerr	4.00	X	\$293.00	=	\$1,172.00
		Task Total		4.00		\$1,172.00
		Project Total		6.00		\$1,758.00

Start Date: 6/1/2023
End Date: 6/30/2023

Printed on: 7/13/2023

Projects/Tasks	Employees	Hours		Rates	Costs
AL225					
AL225:01 Regional Firefighting Discharges WG					
	Kristin Kerr	9.00	X	\$293.00	= \$2,637.00
		Task Total		9.00	\$2,637.00
		Project Total		9.00	\$2,637.00

Start Date: 6/1/2023
End Date: 6/30/2023

Printed on: 7/13/2023

Projects/Tasks	Employees	Hours		Rates		Costs
AL226						
AL226:01 BAHM Regional Updates						
	Jill Bicknell	2.50	X	\$307.00	=	\$767.50
		Task Total		2.50		\$767.50
		Project Total		2.50		\$767.50



June 13, 2023

Invoice No. 430-21/30

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda Countywide Clean Water Program
399 Elmhurst Street
Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: May 1-31, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$0	\$22,501.00	\$22,501.00	\$0
50201	Task 7 - C8CD-23-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$0	\$210,000.00	\$209,005.34	\$994.66
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$4,730.00	\$107,000.00	\$73,049.37	\$33,950.63
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$6,166.25	\$86,000.00	\$36,623.95	\$49,376.05
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$1,935.00	\$130,000.00	\$54,001.20	\$75,998.80
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$2,174.15	\$48,081.00	\$31,993.79	\$16,087.21
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$202.40	\$66,671.00	\$3,721.31	\$62,949.69
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$0	\$6,000.00	\$1,954.00	\$4,046.00
Total:					\$15,207.80	\$1,227,303.00	\$978,684.43	\$248,618.57

Please remit payment to:
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551
(925) 373-7142

Okay to pay G33

Sg

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/30

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 5/1/23-5/31/23

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	22	\$4,730.00	\$33,755.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00			\$4,440.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			\$275.00
Administrative-DC	\$125.00			
Subcontractors				
ALS				\$6,068.00
Kinnetic Environmental				\$2,851.53
Pacific Ecorisk				\$18,550.00
Direct Expenses				
				\$1,074.24
G&A 10% (Subs only)				
				\$2,746.95
G&A 15% (ODC's only)				
				\$161.15
Total Invoiced			\$4,730.00	\$73,049.37
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$68,319.37	\$68,319.37
Current Invoice			\$4,730.00	\$4,730.00
Budget Remaining			\$33,950.63	\$33,950.63

Task 8 Amount Due:	\$4,730.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/30

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 5/1/23-5/31/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	28.25	\$6,073.75	\$36,066.25
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00	0.5	\$92.50	\$92.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH) Bioassessment Services				
Direct Expenses				\$39.30
G&A 10% (Subs only)				
G&A 15% (ODC's only)				\$5.90
Total Invoiced			\$6,166.25	\$36,623.95
TOTALS:				
Authorized Budget			\$86,000.00	\$86,000.00
Prior Invoiced Amount			\$30,457.70	\$30,457.70
Current Invoice			\$6,166.25	\$6,166.25
Budget Remaining			\$49,376.05	\$49,376.05

Task 9 Amount Due:	\$6,166.25
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/30

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 5/1/23-5/31/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	9	\$1,935.00	\$46,870.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-TV	\$120.00			\$240.00
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental				\$2,974.00
San Francisco Estuary Institute				\$2,795.17
Direct Expenses				
				\$71.83
G&A 10% (Subs only)				
				\$576.92
G&A 15% (ODC's only)				
				\$10.78
Total Invoiced			\$1,935.00	\$54,001.20
TOTALS:				
Authorized Budget			\$130,000.00	\$130,000.00
Prior Invoiced Amount			\$52,066.20	\$52,066.20
Current Invoice			\$1,935.00	\$1,935.00
Budget Remaining			\$75,998.80	\$75,998.80

Task 10 Amount Due:	\$1,935.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/30

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 5/1/23-5/31/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$1,976.50		\$29,085.25
Direct Expenses					
G&A 10% (Subs only)			\$197.65		\$2,908.54
G&A 15% (ODC's only)					
Total Invoiced			\$2,174.15		\$31,993.79
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$29,819.64		\$29,819.64
Current Invoice			\$2,174.15		\$2,174.15
Budget Remaining			\$16,087.21		\$16,087.21

Task 11 Amount Due:	\$2,174.15
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/30

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 5/1/23-5/31/23

Task 12 - Asset Management Framework

Task CW21-23 EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$184.00		\$3,383.00
Direct Expenses					
G&A 10% (Subs only)			\$18.40		\$338.31
G&A 15% (ODC's only)					
Total Invoiced			\$202.40		\$3,721.31
TOTALS:					
Authorized Budget			\$66,671.00		\$66,671.00
Prior Invoiced Amount			\$3,518.91		\$3,518.91
Current Invoice			\$202.40		\$202.40
Budget Remaining			\$62,949.69		\$62,949.69

Task 12 Amount Due:	\$202.40
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EOA, Inc.

1410 Jackson St.
Oakland, CA 946124010
Tel: (510) 832-2852
www.eoainc.com

Invoice

Mr Paul Salop
Applied Marine Sciences, Inc.
4749 Bennett Drive, Suite L
Livermore, CA 94551

Invoice Date: Jun 6, 2023
Invoice Num: AMS001-0423
Billing From: Apr 01, 2023
Billing To: Apr 30, 2023

Facilitate Unsheltered Homeless Work Group (AMS001:01) - PO#: TO #2022-0002 (430-001) - Managed by (KAK) Task 11

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Managing Eng./Sci. III	0.50	\$293.00	\$146.50
Senior Engineer/Scientist III	7.50	\$244.00	\$1,830.00
Total Services:			\$1,976.50

Draft BMP Report (AMS001:02) - PO#: TO #2022-0002 (430-001) - Managed by (KAK) Task 12

Professional Services:

<u>Employee Title</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Associate Engineer/ScientistII	1.00	\$184.00	\$184.00
Total Services:			\$184.00

Amount Due This Invoice: \$2,160.50

This invoice is due upon receipt

EOA, Inc.
Ray Goebel

ACCOUNT SUMMARY

Total Budget	Prior Billings	Current Billings	Total Billings	Remaining Balance
\$43,710.00	\$27,108.75	\$2,160.50	\$29,269.25	\$14,440.75



June 14, 2023

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda County Public Works Agency
399 Elmhurst St
Hayward, CA 94544

Subject: AMS Invoice 430-21/30 Activities

Dear Sharon,

This project summary describes activities conducted by AMS in May 2023 associated with invoice 430-21/30. Only subtasks for which work was conducted during the invoice period are shown.

Subtask 7 – Creek Status Monitoring - Implementation

- Participation in coordination meetings with Geosyntec and Jim Scanlin

Subtask 8 – Pollutants of Concern Monitoring

- Conducted QA and data management for lab deliverables for Feb 2023 POC water quality monitoring event
- Developed and submitted field report and lab results summary / interpretation for Feb 2023 monitoring event
- Conducted QA and data management for chemistry and toxicity lab deliverables for wet season regional Pesticides and Toxicity monitoring event conducted Nov 2022

Subtask 9 – Receiving Water Monitoring - Trash

- Coordinated with Oldcastle re: cost estimate and engineering design
- Conducted site visits with City of Dublin, Oldcastle, and potential concrete and maintenance subcontractors at four proposed monitoring locations to review trash controls in place, finalize full trash capture design, generate cost estimates for pre-installation site work and for support to deploy and retrieve netting.
- Coordinated with USACE, Zone 7, and City of Dublin staff on location and permitting of target trash monitoring sites
- Participated in / presented for regional TAG meeting #2 and associated internal TAG prep meetings
- Submitted first draft of Trash Quality Assurance Project Plan (QAPP)

Subtask 10 – Low Impact Development Monitoring Planning

- Coordinated with City of Oakland staff re: target monitoring location and schedule / LOE of planned maintenance activities
- Continued project scoping re: equipment needs and timing

Subtask 11 – Facilitate Unsheltered Homeless Work Group

- Coordinated with Psomas and ACCWP Data Management Subcommittee on mapping task
- Coordinated with Alameda County staff on mapping task
- Researched BMPs for flood management agencies and outside of the Bay Area
- Provided summary for ACCWP Management Committee meeting.

Subtask 12 – ACCWP Asset Management Framework

- Followed-up with remaining municipalities to receive BMP survey information



July 18, 2023

REVISED Invoice No. 430-21/31

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

ACCWP

Invoice for Consulting Services - Procurement Contract No. 21346

PO#7572

Period: June 1-30, 2023

For Approval by Sharon Gosselin

<u>Program No.</u>	<u>Task Numbers</u>	<u>Work Order</u>	<u>Activity Code</u>		<u>Current Invoice</u>	<u>Budgeted</u>	<u>Cumulative</u>	<u>Remaining</u>
50201	Task 1 - C8CD-21-1	F15W81	CW5	Creek Status Monitoring - Implementation-CLOSED	\$0	\$420,000.00	\$420,000.00	\$0
50201	Task 2 - C8F-21-21a	F15W81	CW5	Pollutants of Concern Monitoring-CLOSED	\$0	\$62,250.00	\$62,134.89	\$115.11
50201	Task 3 - PRC-21-1	F15W81	CW5	Website Support-CLOSED	\$0	\$4,400.00	\$4,345.00	\$55.00
50201	Task 4 - C8E-21-1	F15W81	CW5	Arroyo Las Positas SSID Study	\$0	\$60,000.00	\$56,797.07	\$3,202.93
50201	Task 5 - C.8-22-1	F15W81	CW5	Monitoring Subcommittee Workgroup Support-CLOSED	\$0	\$4,400.00	\$2,557.50	\$1,842.50
50201	Task 6 - PRC-21-1	F15W81	PM1	Website Support - CLOSED	\$0	\$22,501.00	\$22,501.00	\$0
50201	Task 7- C8CD-23-1	F15W81	CW5	Creek Status Monitoring - Implementation	\$537.50	\$210,000.00	\$209,542.84	\$457.16
50201	Task 8 - CW8.-22-23	F15W81	CW5	Pollutants of Concern Monitoring	\$1,995.00	\$107,000.00	\$75,044.37	\$31,955.63
50201	Task 9 - CW8.e-22-23	F15W81	CW5	Receiving Water Monitoring - Trash	\$4,192.50	\$86,000.00	\$40,816.45	\$45,183.55
50201	Task 10 - CW8.d.i.22-23	F15W81	CW5	Low Impact Development Monitoring Planning	\$34,673.44	\$130,000.00	\$88,674.64	\$41,325.36
50201	Task 11 - Task CW17-22-23-	F15W81	PM1	Facilitate Unsheltered Homeless Work Group	\$10,009.18	\$48,081.00	\$42,002.97	\$6,078.03
50201	Task 12 - Task CW21-22-23 EOA	F15W81	PM1	Asset Management Framework	\$5,112.53	\$66,671.00	\$8,833.84	\$57,837.16
50201	Task 13 - PRC-23-1	F15W81	PM1	Website Support	\$0	\$6,000.00	\$1,954.00	\$4,046.00
Total:					\$56,520.15	\$1,227,303.00	\$1,035,204.57	\$192,098.43

Please remit payment to:
 Applied Marine Sciences, Inc.
 4749 Bennett Drive, Suite L
 Livermore, CA 94551
 (925) 373-7142

Okay to pay G33

Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 7 - Creek Status Monitoring - Implementation

Task PRC-23-1

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00	2.5	\$537.50			\$60,197.50
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					\$647.50
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					\$1,842.50
Staff Scientist-TV	\$120.00					\$10,560.00
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					\$125.00
<u>Subcontractors</u>						
Kinnetic Environmental						\$32,591.93
Bioassessment Services						\$18,301.89
San Jose State University						\$3,075.00
Benjamin Salop						\$360.00
Ecoanalysts						\$31,437.00
Caltest						\$17,488.30
Coastal Conservation & Research						\$1,153.75
Pacific Ecorisk						\$18,200.50
<u>Direct Expenses</u>						
						\$1,131.42
G&A 10% (Subs only)						
						\$12,260.84
G&A 15% (ODC's only)						
						\$169.71
Total Invoiced			\$537.50			\$209,542.84
TOTALS:						
Authorized Budget			\$210,000.00			\$210,000.00
Prior Invoiced Amount			\$209,005.34			\$209,005.34
Current Invoice			\$537.50			\$537.50
Budget Remaining			\$457.16			\$457.16

Task 7 Amount Due:	\$537.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 8 - Pollutants of Concern Monitoring

Task CW8.f-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	9	\$1,935.00	\$35,690.00
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$2,220.00
Senior Scientist-TV	\$120.00	0.5	\$60.00	\$4,500.00
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			\$907.50
Administrative-DS	\$110.00			\$275.00
Administrative-DC	\$125.00			
Subcontractors				
ALS				\$6,068.00
Kinnetic Environmental				\$2,851.53
Pacific Ecorisk				\$18,550.00
Direct Expenses				
				\$1,074.24
G&A 10% (Subs only)				
				\$2,746.95
G&A 15% (ODC's only)				
				\$161.15
Total Invoiced			\$1,995.00	\$75,044.37
TOTALS:				
Authorized Budget			\$107,000.00	\$107,000.00
Prior Invoiced Amount			\$73,049.37	\$73,049.37
Current Invoice			\$1,995.00	\$1,995.00
Budget Remaining			\$31,955.63	\$31,955.63

Task 8 Amount Due:	\$1,995.00
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 9 - Receiving Water Monitoring - Trash

Task CW8.e.22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	19.5	\$4,192.50	\$40,258.75
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$92.50
Staff Scientist-ES	\$110.00			
Staff Scientist-EG	\$110.00			
Staff Scientist-TV	\$120.00			\$420.00
Administrative-DS	\$110.00			
Administrative-DC	\$125.00			
Subcontractors				
Kinnetic Environmental (ADH) Bioassessment Services				
Direct Expenses				\$39.30
G&A 10% (Subs only)				
G&A 15% (ODC's only)				\$5.90
Total Invoiced			\$4,192.50	\$40,816.45
TOTALS:				
Authorized Budget			\$86,000.00	\$86,000.00
Prior Invoiced Amount			\$36,623.95	\$36,623.95
Current Invoice			\$4,192.50	\$4,192.50
Budget Remaining			\$45,183.55	\$45,183.55

Task 9 Amount Due:	\$4,192.50
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31

Work Order#: F15W81
 Activity Code: CW5
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 10 - Low Impact Development Monitoring Planning

Task CW8.d.i-22-23

	Subtask 1			Task Total
Labor	Rate	Hours	Charges	
Principal Scientist-JJ	\$231.75			
Program Manager-PS	\$215.00	20.5	\$4,407.50	\$51,277.50
Principal Scientist-MB	\$165.00			
Principal Scientist-AM	\$185.00			\$462.50
Staff Scientist-TV	\$120.00			\$240.00
Staff Scientist-EG	\$110.00			
Staff Scientist-CH	\$115.00			
Administrative-DS	\$110.00			
Administrative-DC	\$125.00	2	\$250.00	\$250.00
Subcontractors				
Kinnetic Environmental			\$23,856.10	\$26,830.10
San Francisco Estuary Institute				\$2,795.17
Coastal Conservation and Research			\$1,153.75	\$1,153.75
Direct Expenses				
			\$2,178.34	\$2,250.17
G&A 10% (Subs only)				
			\$2,501.00	\$3,077.92
G&A 15% (ODC's only)				
			\$326.75	\$337.53
Total Invoiced			\$34,673.44	\$88,674.64
TOTALS:				
Authorized Budget			\$130,000.00	\$130,000.00
Prior Invoiced Amount			\$54,001.20	\$54,001.20
Current Invoice			\$34,673.44	\$34,673.44
Budget Remaining			\$41,325.36	\$41,325.36

Task 10 Amount Due:	\$34,673.44
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31

Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 11 - Facilitate Unsheltered Homeless Work Group

Task CW17-22-23-EOA

	Subtask 1				Task Total
Labor	Rate	Hours	Charges		
Principal Scientist-JJ	\$231.75				
Program Manager-PS	\$215.00				
Principal Scientist-MB	\$165.00				
Principal Scientist-AM	\$185.00				
Staff Scientist-ES	\$110.00				
Staff Scientist-EG	\$110.00				
Staff Scientist-CH	\$115.00				
Administrative-DS	\$110.00				
Administrative-DC	\$125.00				
Subcontractors					
EOA, Inc.			\$9,099.25		\$38,184.50
Direct Expenses					
G&A 10% (Subs only)			\$909.93		\$3,818.47
G&A 15% (ODC's only)					
Total Invoiced			\$10,009.18		\$42,002.97
TOTALS:					
Authorized Budget			\$48,081.00		\$48,081.00
Prior Invoiced Amount			\$31,993.79		\$31,993.79
Current Invoice			\$10,009.18		\$10,009.18
Budget Remaining			\$6,078.03		\$6,078.03

Task 11 Amount Due:	\$10,009.18
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Ms. Sharon Gosselin
 ACCWP Program Manager
 Alameda Countywide Clean Water Program
 399 Elmhurst Street
 Hayward, CA 94544

Invoice No. 430-21/31
 Work Order#: F15W81
 Activity Code: PM1
 Project Number #50201

Payment Schedule
 6/1/23-6/30/23

Task 12 - Asset Management Framework

Task CW21-23 EOA

		Subtask 1				Task Total
Labor	Rate	Hours	Charges			
Principal Scientist-JJ	\$231.75					
Program Manager-PS	\$215.00					
Principal Scientist-MB	\$165.00					
Principal Scientist-AM	\$185.00					
Staff Scientist-ES	\$110.00					
Staff Scientist-EG	\$110.00					
Staff Scientist-CH	\$115.00					
Administrative-DS	\$110.00					
Administrative-DC	\$125.00					
Subcontractors						
EOA, Inc.			\$4,647.75			\$8,030.75
Direct Expenses						
G&A 10% (Subs only)			\$464.78			\$803.09
G&A 15% (ODC's only)						
Total Invoiced			\$5,112.53			\$8,833.84
TOTALS:						
Authorized Budget			\$66,671.00			\$66,671.00
Prior Invoiced Amount			\$3,721.31			\$3,721.31
Current Invoice			\$5,112.53			\$5,112.53
Budget Remaining			\$57,837.16			\$57,837.16

Task 12 Amount Due:	\$5,112.53
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July 19, 2023

Ms. Sharon Gosselin
ACCWP Program Manager
Alameda County Public Works Agency
399 Elmhurst St
Hayward, CA 94544

Subject: AMS Invoice 430-21/31 Activities

Dear Sharon,

This project summary describes activities conducted by AMS in June 2023 associated with invoice 430-21/31. Only subtasks for which work was conducted during the invoice period are shown.

Subtask 7 – Creek Status Monitoring

- Coordination with BAMSC Programs on July dry season monitoring

Subtask 8 – Pollutants of Concern Monitoring

- Planning for FY 2024 Pesticides and Toxicity and POCs water quality monitoring
- Contracting and bottle order for Caltest and PER for Pesticides and Toxicity and POCs monitoring

Subtask 9 – Receiving Water Monitoring - Trash

- Participated in monthly planning meeting with Jim Scanlin and Geosyntec
- Review and responded to MPC and TAG comments on ACCWP Trash Outfall Monitoring Plan
- Attended internal BAMSC Trash coordinating meeting
- Meeting with Keith Lichten / Derek Beaudy of WB to resolve remaining questions before purchase of durable equipment.
- Coordinated with Zone 7 on CDFW permitting issues
- Participated in several meetings and developed responses to comments of TAG members to monitoring plan and QAPP
- Revised precipitation model to predict number of sampleable storms based on hindcast of precip data

Subtask 10 – Low Impact Development Monitoring Planning

- Participated in monthly planning meeting with Jim Scanlin and Geosyntec
- Coordinated with KEI on equipment purchases and staffing planning
- Coordinated with Enthalpy on cost estimate and QA for organics analyses for WY 2024 LID monitoring
- Attended internal BAMSC LID coordinating meeting
- Purchasing of LID monitoring equipment
- Meeting with Keith Lichten / Derek Beaudy of WB to resolve remaining questions before purchase of durable equipment

- Site visit to LID facility to meet with City of Oakland staff and maintenance contractors re: permitting of site, planning for equipment installation, and coordination with maintenance contractor on required initial and ongoing site work

Subtask 11 – Facilitate Unsheltered Homeless Work Group

- Continued to coordinate with Psomas and DM-G Subcommittee on mapping task
- Coordinated ACCWP C.17 Work Group Meeting on June 27 and provided information, guidance and updates on mapping, evaluation effectiveness, Annual Report and Regional BMP report
- Presented at ACCWP Policy Committee meeting on June 28
- Attended ACCWP Management Committee meeting on June 28 and provided updates

Subtask 12 – ACCWP Asset Management Framework

- Continued to review and provide content for draft Regional BMP report

7. DOCUMENTATION

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

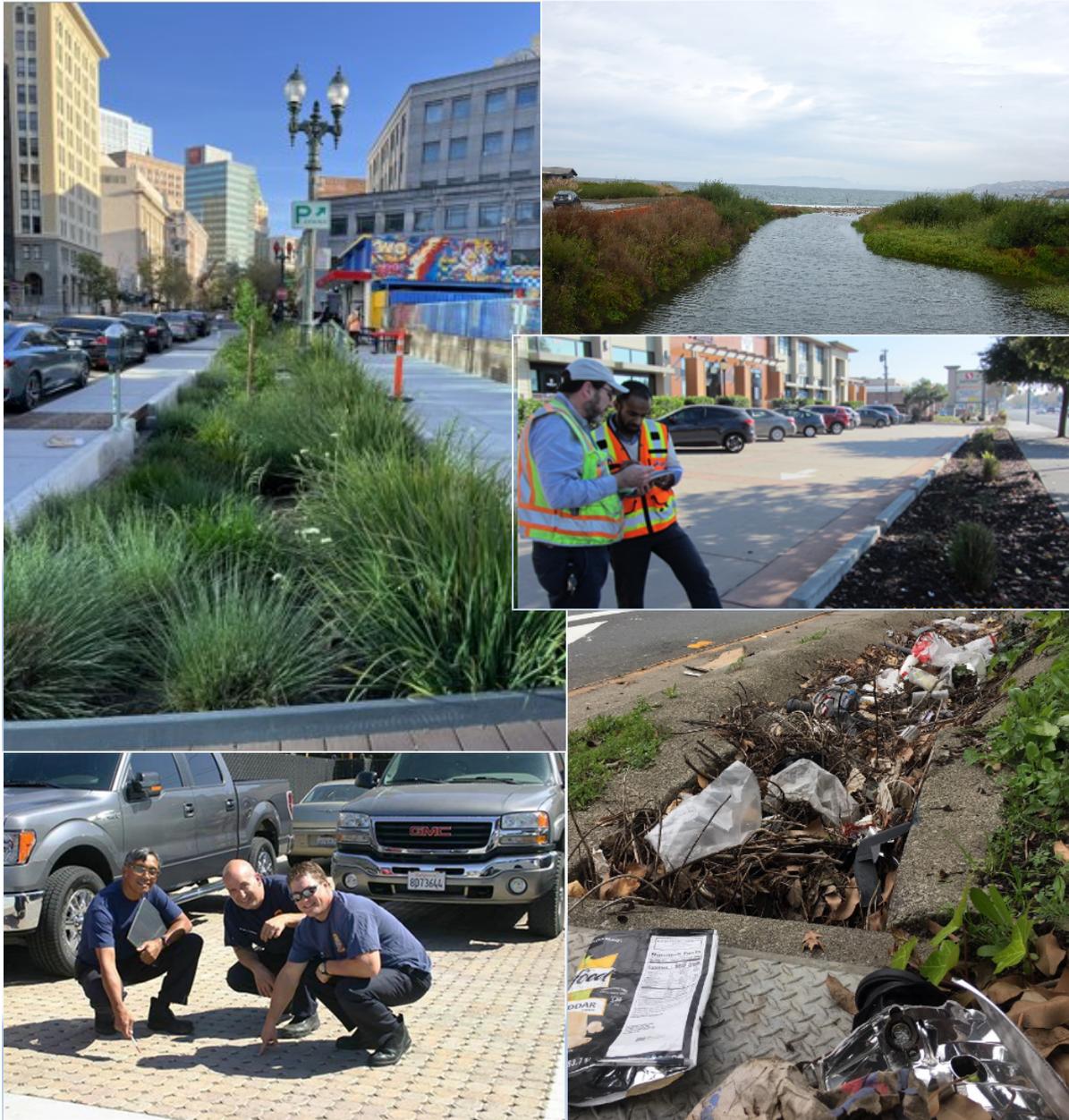
**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
MUNICIPAL REGIONAL STORMWATER NPDES PERMIT**

**ORDER NO. R2-2022-0018
AS MODIFIED BY ORDER NO. R2-2023-0019
NPDES PERMIT NO. CAS612008
MAY 11, 2022**

EXHIBIT 1
to Section 7

California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit

Order No. R2-2022-0018
NPDES Permit No. CAS612008
May 11, 2022



**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

**ORDER No. R2-2022-0018
NPDES PERMIT No. CAS612008**

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood and Sea Level Rise Resiliency District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield, Suisun City, Vallejo, and the Vallejo Flood & Wastewater District, which have joined together to form the Solano Stormwater Alliance (Solano Permittees)

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The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Attachment A) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. The Fact Sheet, including any supplements thereto, is hereby incorporated by reference.

Existing Permit

2. **Alameda County**—The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 1, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
3. **Contra Costa County**—The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 1, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
4. **San Mateo County**—The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City,

San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood and Sea Level Rise Resiliency District, and San Mateo County have joined together to form the San Mateo Countywide Water Pollution Prevention Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 2, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County**—The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 2, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
6. **Fairfield-Suisun**—The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 3, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
7. **Vallejo**—The City of Vallejo and Vallejo Flood & Wastewater District (hereinafter referred to as the Vallejo Permittees) have submitted permit applications (Report of Waste Discharge), dated June 25 and June 29, 2020, respectively, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions. The Vallejo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
8. The cities of Fairfield, Suisun City, Vallejo, and the Vallejo Flood & Wastewater

District have joined together to form the Solano Stormwater Alliance (hereinafter referred to as the Solano Permittees). The Alameda, Contra Costa, San Mateo, Santa Clara, and Solano Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, U.S. EPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, U.S. EPA published an Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.
10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law, and U.S. EPA, where required.
11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, and selenium in San Francisco Bay segments; pesticide associated toxicity, and trash in urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.
12. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

13. Stormwater runoff is generated from various land uses in all the hydrologic sub-basins in the Basin and discharges into watercourses, which in turn flow into Central,

Lower and South San Francisco Bay, and Suisun and San Pablo Bays.

14. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not limited to, support for aquatic life; and other pollutants that can cause aquatic toxicity in the receiving waters.
15. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to U.S. EPA stormwater regulations.
16. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.
17. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.
18. The Water Board notified the Permittees and interested agencies and persons of its intent to adopt this Order and provided an opportunity to submit written comments and recommendations.
19. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

20. This Order supersedes and rescinds Order Nos. R2-2015-0049 as amended by R2-2019-0004.
21. This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective July 1, 2022, provided the Regional Administrator, U.S. EPA, Region 9, has no objections.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2015-0049, as amended by Order No. R2-2019-0004, is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Permittees shall comply with the following requirements in this Order. This action in no way prevents the Water Board from taking enforcement action for past violations of the previous order.

A. DISCHARGE PROHIBITIONS

- A.1.** The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.
- A.2.** It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. Permittees are also subject to the trash discharge prohibition in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California and the Water Quality Control Plan for Ocean Waters of California.

B. RECEIVING WATER LIMITATIONS

- B.1.** The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
- B.1.a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
 - B.1.b.** Bottom deposits or aquatic growths;
 - B.1.c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - B.1.d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - B.1.e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.
- B.2.** The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are

adopted and approved by the State Water Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Waters Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.24. Compliance with Provisions C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f of this Order, which prescribe requirements and schedules for Permittees identified therein to manage their discharges that may cause or contribute to violations of water quality standards (WQS) for pesticides, trash, mercury, polychlorinated biphenyls (PCBs), bacteria, sediment, diazinon and chlorpyrifos, and methylmercury, shall constitute compliance during the term of this Order with Receiving Water Limitations B.1 and B.2 for the pollutants and the receiving waters identified in the provisions. Compliance with Provision C.10 which prescribes requirements and schedules for Permittees to manage their discharges of trash, shall also constitute compliance with Discharge Prohibitions A.1 and A.2 during the term of this Order for discharges of trash. If exceedance(s) of WQS, except for exceedances of WQS for pesticides, trash, mercury, PCBs, bacteria, sediment, diazinon and chlorpyrifos, and methylmercury that are managed pursuant to Provisions C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f, persist in receiving waters notwithstanding the implementation of the required controls and actions, the Permittees shall comply with the following procedure:

- C.1.a.** Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable (WQS), the Permittee(s) shall notify, within no more than 30 days, and thereafter submit a report to the Water Board that describes controls or best management practices (BMPs) that are currently being implemented, and the current level of implementation, and additional controls or BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of water quality standards. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and
- C.1.b.** Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring

exceedances of the same receiving water limitations unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

i. Task Description – Asphalt/Concrete Removal, Cutting, Installation, and Repair

The Permittees shall implement appropriate BMPs, such as those described in the California Stormwater Quality Association (CASQA) Municipal Stormwater BMP Handbook and Construction Stormwater BMP Handbook, at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving, repair, or maintenance activities.

ii. Implementation Levels

- (1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if wastewater generated from road construction, repair, and maintenance activities may be discharged to the sanitary sewer system, provided appropriate approvals are obtained and pretreatment standards are met.
- (2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from work sites upon completion of work. The Permittees shall require cleanup of all construction debris, spills, and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association (BASMAA) Blueprint for a Clean Bay or the CASQA Municipal Stormwater BMP Handbook.

iii. Reporting

- (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
- (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

- i. **Task Description** – The Permittees shall implement and require to be implemented BMPs that prevent the discharge of polluted wash water and non- stormwater to storm drains from pavement, sidewalk and plaza cleaning, mobile cleaning, outdoor pressure washing operations, and washing down of trash areas and gas station or mobile fueling service areas. BMPs for washing down outside areas of human habitation shall include sanitizing procedures. The Permittees shall implement BMPs such as those included in the BASMAA Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.
- ii. **Reporting**
 - (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
 - (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

- i. **Task Description**
 - (1) The Permittees shall implement appropriate BMPs to prevent the discharge of polluted stormwater and non-stormwater from bridges and structural maintenance activities directly into surface waters or storm drains.
 - (2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.
- ii. **Implementation Levels**
 - (1) The Permittees shall prevent all debris and pollutants, including structural materials and coating debris, such as paint chips, generated in bridge and structure maintenance or graffiti removal, from entering storm drains or water courses.
 - (2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks, or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste, or wash water due to graffiti removal from entering storm drains or watercourses.

- (3) The Permittees shall use proper disposal methods for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts the proper capture and disposal methods for the wastes generated.

iii. Reporting

- (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
- (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.d. Stormwater Pump Stations

- i. **Task Description** –The Permittees shall implement measures to operate, inspect, and maintain stormwater pump stations to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in stormwater discharges to comply with WQS.
- ii. **Implementation Levels** – The Permittees shall comply with the following at Permittee-owned or -operated pump stations:
 - (1) Upon becoming aware that the discharge from a pump station has a dissolved oxygen (DO) concentration below 3.0 mg/L, implement corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 milligrams per liter (mg/L) and verify the effectiveness of the corrective actions with monitoring. Corrective actions are not necessary for discharges from pump stations that remain in the stormwater collection system or infiltrate into a dry creek immediately downstream.
 - (2) Ensure that pump stations are free of debris and trash, replace any oil-absorbent booms, as needed, and investigate and abate illicit discharges. Pump stations excluded from C.2.d.ii.(1) above are not excluded from this requirement.
 - (3) The Permittees shall maintain records of inspection, maintenance, implementation of corrective actions, and any monitoring records at Permittee-owned or -operated pump stations. These records shall be made available to Water Board staff or its representatives during inspections and audits, or otherwise upon request.

C.2.e. Rural Public Works Construction and Maintenance**i. Task Description – Rural Road and Public Works Construction and Maintenance**

For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing, or open space uses. Rural roads include paved, unpaved, utility, and access roads in rural areas. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, such as those in the CASQA Construction Stormwater BMP Handbook, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

San Mateo County has additional rural road requirements for the Pescadero-Butano Sediment TMDL described in Provision C.18 and shall also implement that provision.

ii. Implementation Level

- (1) The Permittees shall continue to implement erosion and sediment control BMPs, in addition to those described in Provision C.2.a, during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities.
- (2) The Permittees shall implement appropriate BMPs to minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities by:
 - (a) Selecting road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;
 - (b) Identifying and prioritizing rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;
 - (c) Constructing roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;
 - (d) Implementing an inspection program to maintain rural roads' structural integrity and prevent impacts to water quality;

- (e) Maintaining rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion;
 - (f) Re-grading unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and
 - (g) Replacing existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner.
- (3) The Permittees shall incorporate information about the importance of planning and construction in avoiding water quality impacts into existing training and guidance on permitting requirements for rural public works activities.
- (4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for rural public works construction and maintenance activities, including reporting on increased maintenance in priority areas, in the Annual Report.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

- (1) The Permittees shall implement and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle and heavy equipment maintenance yards and parking areas, and material storage facilities, to comply with water quality standards. Each SWPPP shall incorporate all appropriate BMPs, such as those described in the current versions of the CASQA Municipal Stormwater BMP Handbook or the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, and addenda, as applicable.
- (2) The requirements in this provision shall apply only to facilities that are not covered under the State Water Board's Industrial Stormwater NPDES General Permit.

ii. Implementation Level

- (1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters from street sweepers, vactor trucks, or other related equipment. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.
- (2) Routinely inspect corporation yards to ensure that non-stormwater discharges are not entering the storm drain system and that pollutant discharges are prevented to the maximum extent practicable. At a minimum, each corporation yard shall be fully inspected each year between August 1 and September 30. Permittees shall cease or cause to be ceased any active non-stormwater discharges immediately after they are discovered. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded.
- (3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency. In areas where a sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to an alternative sanitary sewer connection or municipal wastewater treatment plant, or implement appropriate BMPs to collect, properly treat, and reuse wash water onsite without any discharge.
- (4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where a sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.

- (5) Outdoor storage areas containing pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. Reporting

- (1) In each Annual Report, Permittees shall list activities conducted in the corporation yards that have BMPs in the site-specific SWPPP, the date(s) of inspections, the results of inspections, and any follow-up actions, including the date of any necessary corrective actions implemented. The information may be reported in a narrative or tabular format.
- (2) In the 2023 Annual Report, Permittees shall make their corporation yard SWPPPs available to the Water Board by providing links to online documents or submitting the documents as part of the Annual Report.

C.2.g. Storm Drain Inlet Marking

- i. **Task Description** – Permittees shall mark and maintain municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. For newly approved, privately maintained streets, Permittees shall require storm drain inlet markings with an appropriate stormwater pollution prevention message by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings on the storm drain inlets shall be verified prior to acceptance of the project.

ii. Implementation Level

- (1) Inspect and maintain storm drain inlet markings of at least 80 percent of municipality-maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.
- (2) Storm drain inlet markings of newly developed, privately maintained streets shall be verified prior to acceptance of the project. Permittees shall require maintenance of the storm drain inlet markings through the development maintenance entity.
- (3) Certify that all privately maintained streets had storm drain inlet markings verified prior to acceptance of the project and were required to maintain the storm drain inlet markings through the development maintenance entity.

- iii. **Reporting** – In the 2026 Annual Report, each Permittee shall (1) state how many municipally-maintained storm drain inlets it has, (2) certify that at least 80 percent of municipality-maintained storm drain inlet markings are legibly labeled with an appropriate stormwater pollution prevention message during the permit term; and (3) include a picture of a labeled municipality-maintained inlet.

C.2.h. Staff Training

- i. **Task Description** – Permittees shall ensure municipal maintenance staff conducting routine repair and maintenance activities of municipal facilities and infrastructure, or activities related to the implementation of corporation yard SWPPPs, are appropriately trained on the requirements of Provision C.2 and methods of implementation. Trainings may be program-wide, region-wide, or Permittee-specific.
- ii. **Implementation Level** – At a minimum, provide training at least once within the 5-year term of this Permit to municipal staff on the following topics as relevant to municipal staff responsible for maintenance activities:
 - (1) Stormwater pollution prevention;
 - (2) Appropriate BMPs for maintenance and cleanup activities;
 - (3) Street and Road Repair and Maintenance BMPs;
 - (4) Sidewalk/Plaza Maintenance and Pavement Washing;
 - (5) Bridge and Structure Maintenance and Graffiti Removal;
 - (6) Corporation Yard SWPPPs and BMPs; and
 - (7) Spill and discharge response and notification procedures and contacts.
- iii. **Reporting** – The Permittees shall include the following information in each Annual Report:
 - (1) Dates of training;
 - (2) Training topics covered;
 - (3) Total number of Permittee maintenance staff;
 - (4) Number and percentage of Permittee maintenance staff who attended training;
 - (5) If there was no training in a given year, so state.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and significant redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

- i. Task Description** – At a minimum, each Permittee shall:
- (1) Have adequate legal authority to implement all requirements of Provision C.3;
 - (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
 - (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
 - (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
 - (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
 - (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; and protection and/or restoration of riparian areas and wetlands as project amenities;
 - (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable

review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:

- Storm drain inlet stenciling.
- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as ReScape California.
- Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
- Covered trash, food waste, and compactor enclosures.
- Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
 - Dumpster drips from covered trash and food compactor enclosures.
 - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.

(8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the ReScape California Guidelines).

ii. **Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1) - (8) in the 2023 Annual Report.

C.3.b. Regulated Projects

i. **Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii. below (hereinafter called Regulated Projects) to implement LID source control, site design, and

stormwater treatment onsite or at a joint stormwater treatment facility¹ in accordance with Provisions C.3.c. and C.3.d., unless the Provision C.3.e. alternate compliance options are invoked. For Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

- (1) Any Regulated Project that has been approved with stormwater treatment measures in compliance with Provision C.3.d. under a previous MS4 permit is exempt from the requirements of Provision C.3.c. (low impact development requirements).
- (2) Any Regulated Project that was approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that has not begun construction by the effective date of this Permit, shall be required to fully comply with the requirements of Provisions C.3.c. and C.3.d. Permittees may grant exemptions from this requirement as follows:
 - (a) An exemption may be granted to:
 - (i) Any Regulated Project that was previously approved with a vesting tentative map that confers a vested right to proceed with development in substantial compliance with the ordinances, policies, and standards in effect at the time the vesting tentative map was approved or conditionally approved, as allowed by State law.
 - (ii) Any Regulated Project for which the Permittee has no legal authority to require changes to previously granted approvals, such as projects that have been granted building permits.
 - (b) An exemption from the LID requirements of Provision C.3.c. may be granted to any such Regulated Project as long as stormwater treatment with media filters is provided that comply with the hydraulic sizing requirements of Provision C.3.d.
- (3) Any pending Regulated Project that has not yet been approved as of June 30, 2023, and for which a Permittee has no legal authority to require new requirements under Government Code sections 66474.2 or 65589.5., subd. (o), is subject to the Provision C.3 requirements in effect on the Permit's effective date.

¹ **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects.

ii. **Regulated Projects are defined in the following categories:**

(1) **Special Land Use Categories**

- (a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee, including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the project:²
- (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
 - (ii) Retail gasoline outlets;
 - (iii) Restaurants (SIC Code 5812); or
 - (iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.
- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv):
- (i) The following interior and exterior practices are excluded:
 - a. Interior remodels; and
 - b. Routine maintenance or repair such as roof or exterior wall surface replacement.
 - (ii) The following pavement maintenance practices are excluded;
 - a. Pothole and square cut patching;
 - b. Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage;

² This does not include separate additional portions of the public right of way that Permittees require treatment of, which the Regulated Project is not disturbing. This is typically enforced through local ordinance, such as what is described in Provision C.3.j.ii.(2)(j).

- c. Shoulder grading;
 - d. Reshaping/regrading drainage systems;
 - e. Crack sealing;
 - f. Pavement preservation activities that do not expand the road prism;
 - g. Upgrading from a bituminous surface treatment (e.g., chip seal)³ with an overlay of asphalt or concrete, without expanding the area of coverage;⁴
 - h. Applying a bituminous surface treatment to existing asphalt or concrete pavement, without expanding the area of coverage; and
 - i. Vegetation maintenance.
 - j. Layering gravel over an existing gravel road, without expanding the area of coverage.
- (iii) The following pavement maintenance practices are not excluded. For Road Reconstruction Projects, these practices are included only if they trigger all criteria specified in Provision C.3.b.ii.(5), including the criteria regarding contiguousness.
- a. Removing and replacing an asphalt or concrete pavement to the top of the base course⁵ or lower, or repairing the pavement base (including repair of the pavement base in preparation for bituminous surface treatment, such as chip seal), as these are considered replaced impervious surfaces;
 - b. Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders, as these are considered new impervious surfaces; and
 - c. Resurfacing by upgrading from dirt to gravel, to a bituminous surface treatment (e.g., chip seal),³ to asphalt, or to concrete; or upgrading from gravel to a bituminous surface treatment, to asphalt, or to concrete, as these are considered new impervious surfaces.

³ This is defined further in the Glossary

⁴ This includes wedge grinding that is implemented as part of the upgrade project, so long as the area of coverage is not expanded. See definition of wedge grinding in Glossary.

⁵ See definition in Glossary.

(iv) For a project consisting of a combination of exempted pavement maintenance practices (pursuant to Provision C.3.b.ii.(1)(b)(ii)), non-exempted pavement maintenance practices (pursuant to Provision C.3.b.ii.(1)(b)(iii)), and/or practices that fall under any other Regulated Project category (pursuant to Provision C.3.b.ii.(1)-(6)), the parts of the project that are not exempt shall be evaluated as a Regulated Project.

(c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(e) The calculations in Provision C.3.b.ii.(1)(c)-(d) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.

(2) **Other Development Projects**

New development projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects (other than public road projects), including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the projects.² This category includes development projects on public or private land that fall under the planning and building authority of a Permittee.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, new and reconstructed private roads and private trails, and public projects (other than public road and trail projects),⁶ including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the projects.² Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions that apply to this category are listed in Provision C.3.b.ii.(1)(b). Public works projects that are additionally excluded from this category – unless they create and/or replace 5,000 contiguous⁸ square feet or more of impervious surface – include the following examples: sidewalk gap closures,⁷ sidewalk section replacement, and ADA curb ramps. However, as noted above, portions of the public right of way that are developed or redeveloped as part of Regulated Projects (e.g., curb extensions, pavement replacement, and curb and gutter replacement) shall be included in the total created and/or replaced impervious surface that must be treated by those Regulated Projects.

- (a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in

⁶ Examples of such public projects are construction/reconstruction of: streetlights, signals, and signs; curb extensions, sidewalks, and medians; crosswalk enhancements, bulb-outs, curb ramps, and ADA improvements; and sidewalk extensions.

⁷ The filling of gaps between sections of sidewalks, with pavement (e.g., where a block has a sidewalk, but it is not continuous because it is missing across a parcel, completing the sidewalk across that parcel).

the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

- (c) The calculations in Provision C.3.b.ii.(3)(a)-(b) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.

(4) New or Widening Road Projects

Any of the following types of road projects that create 5,000 square feet or more of newly constructed contiguous⁸ impervious surface, that are both public and private road projects, and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
 - (i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
 - (ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

⁸ Project areas interrupted by cross streets or intersections are considered contiguous.

- (c) Construction of impervious⁹ trails that are greater than or equal to 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
 - (i) Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
 - (ii) Bicycle lanes built as part of new streets or roads, but that are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
 - (iii) Impervious trails that direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees, where those areas are at least half as large as the contributing impervious surface area.
 - (iv) Sidewalks, bicycle lanes, or trails constructed as pervious pavement systems.¹⁰
 - (v) Caltrans highway projects and associated facilities.

(5) Road Reconstruction Projects

Road projects that involve the reconstruction of existing streets or roads,¹¹ which create and/or replace greater than or equal to one contiguous⁸ acre of impervious surface and that are public road projects and/or fall under the building and planning authority of a Permittee, including sidewalks and bicycle lanes that are built or rebuilt as part of the existing streets or roads. This Regulated Project category includes utility trenching projects which are - on average, over the entire length of the project - greater than or equal to 8 feet wide. It also includes public pavement maintenance practices listed in Provision C.3.b.ii.(1)(b)(iii)(b).

Project activities that are included and excluded, which apply to this category, are listed in Provision C.3.b.ii.(1)(b)(ii)-(iv). Pavement maintenance practices that are not excluded (as detailed in Provision C.3.b.ii.(1)(b)(iii)) are considered Road Reconstruction Projects if they meet the other definitions therein.

⁹ Gravel layers are considered impervious, excluding gravel layers that are included in pervious pavement systems (as defined in the Glossary).

¹⁰ As defined in the Glossary.

¹¹ The definition of roads includes roads on levees.

- (a) Where the reconstruction project results in an alteration of greater than or equal to 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that was reconstructed).
- (b) Where the reconstruction project results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new and/or replaced impervious surface within the project footprint). However, if the stormwater runoff from the existing impervious surface and the added impervious surface cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added impervious surface.
- (c) Road Reconstruction Projects shall comply with Provision C.3.d. However, with cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the Provision C.3.j.i.(2)(g) approach outlined in the Previous Permit, significant amounts of run-on from adjacent areas, or other substantial constraints identified by Permittees) and with reporting in their Annual Reports, Permittees may use the Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis Green Infrastructure Facility Sizing for Non-Regulated Street Projects submitted in June 2019, to size Road Reconstruction Projects. If so, Permittees must comply with the Water Board's June 21, 2019, conditional approval of that submittal, which provides qualifiers to, and the conditions under which, the alternative sizing criteria may be used.
- (d) Permittees may credit the acreage of impervious surface created or replaced for Road Reconstruction Projects towards the Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2).

(6) **Large Detached Single-Family Home Projects**

Detached single-family home projects that create and/or replace 10,000 ft² or more of impervious surface (collectively over the entire project site) and are not part of a larger development or redevelopment plan regulated under Provision C.3.b.ii.(2)-(3).

- (a) Where a single family home project results in an alteration of **50 percent or more** of the impervious surface of a previously existing project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire project).
- (b) Where a single family home project results in an alteration of **less than 50 percent** of the impervious surface of a previously existing project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).
- (c) The calculations in Provision C.3.b.ii.(6)(a)-(b) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.
- (d) Included in this Regulated Project category is the addition of an accessory dwelling unit (ADU) on an existing parcel with one single-family home, without a subdivision.

iii. Implementation Level

- (1) Provision C.3.b.i shall be effective immediately.
- (2) Beginning July 1, 2023, the Regulated Project definitions in Provision C.3.b.ii are effective.
- (3) Prior to July 1, 2023, the Regulated Project definitions in Provision C.3.b.ii in Attachment I are effective, which are definitions from the Previous Permit.
- (4) For Provisions C.3.b.iii.(1)-(3), this shall include a database or equivalent tabular format that contains all the information under Reporting (Provision C.3.b.iv.).

iv. Reporting

(1) C.3.b.i.(2) Reporting

In the 2023 Annual Report, each Permittee shall provide a complete list of the development projects that are subject to the requirements of Provision C.3.b.i.(2). For each such project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). If a Permittee has no projects subject to Provision C.3.b.i.(2), it shall so state in the 2023 Annual Report.

(2) Annual Reporting – C.3.b.ii. Regulated Projects

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the fiscal year Annual Report, in tabular form (as set forth in the Provision C.3.b. Sample Reporting Table included in Attachment B):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;
- (e) Total new impervious surface area and/or total replaced impervious surface area;
- (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
- (g) Status of project (e.g., application date, application deemed complete date, project approval date), and whether the project has been completed. If not, the estimated project completion date;
- (h) Source control measures;
- (i) Site design measures;
- (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
- (k) Operation and maintenance responsibility mechanism for the life of the project;
- (l) Hydraulic Sizing Criteria used;

- (m) Alternative compliance measures for Regulated Project (if applicable)
- (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.iv.(2)(a) – (l) for the offsite project; and
 - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.iv.(2)(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and
- (n) Hydromodification (HM) Controls (see Provision C.3.g) – If not required, state why not. If required, state control method used.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

- i. Task Description** – The Permittees shall, at a minimum, implement the following LID requirements:
- (1) Source Control Requirements
 - Require all Regulated Projects to implement source control measures onsite that, at a minimum, shall include the following:
 - (a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
 - Dumpster drips from covered trash, food waste, and compactor enclosures;

- Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;
- (b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;
- (c) Properly designed trash storage areas;
- (d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;
- (e) Efficient irrigation systems; and
- (f) Storm drain system stenciling or signage.
- (2) Site Design and Stormwater Treatment Requirements
- (a) Require each Regulated Project to implement at least the following design strategies onsite:
- (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
 - (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
 - (iii) Minimize impervious surfaces;
 - (iv) Minimize disturbances to natural drainages; and
 - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.

- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with pervious pavement systems.¹²
 - Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.
- (b) Permittees shall implement the design specifications for pervious pavement systems contained within their countywide stormwater handbooks.
- (c) Require each Regulated Project and all projects implemented pursuant to Provision C.3.j to treat 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's or Provision C.3.j project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
- (i) LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment.
 - (ii) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in the Revised Model Biotreatment Soil Media Specifications submitted by BASMAA on behalf of the Permittees on February 5, 2016, and approved on April 18, 2016, pursuant to the requirements of Provision C.3.c.i.(2)(c)(ii) of MRP 2. Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.
 - a. The Permittees may convene a workgroup with Water Board staff to discuss and investigate the pollutant removal

¹² Pervious pavement systems include pervious asphalt, pervious concrete, pervious pavers, and grid pavers, and are defined in the Glossary.

effectiveness and hydrologic equivalency of – and suggested criteria for – high flow-rate media treatment systems in combination with retention/detention measures, such as silva cells and structural soils, as compared to conventional bioretention. The workgroup should consider issues including: the MEP standard in relation to the use of such systems; the pollutant removal benefits and hydrologic criteria associated with the Permit's LID design approach and which are included in other MS4 permits, such as the Western Washington Phase II Municipal Stormwater Permit (NPDES Permit No. WAR045717) and the Los Angeles Regional MS4 Permit (NPDES Permit No. CAS004004); and additional issues, such as the feasibility of obtaining high flow rate media at construction and, as needed, for the life of a project.

(iii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:

- a. The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
- b. The green roof system planting media shall be sufficiently deep to support the long-term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.

(d) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(c) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Reporting

(1) For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.iv, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

i. **Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects and for projects implemented pursuant to Provision C.3.j meet at least one of the following hydraulic sizing design criteria:

- (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:
 - (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
 - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of CASQA’s Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
 - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
 - (a) 10 percent of the 50-year peak flow rate;
 - (b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
 - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
 - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- ii. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.iv.(2).
- iii. **Limitations on Use of Infiltration Devices in Stormwater Treatment Systems**
- (1) For Regulated Projects and for all projects implemented pursuant to Provision C.3.j, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil.

Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

- (2) For any Regulated Project and for any project implemented pursuant to Provision C.3.j that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
 - (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
 - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
 - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
 - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;
 - (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
 - (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by

highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

iv. Tree Runoff Reduction and Tree-Based Stormwater Treatment Systems

- (1) The Permittees collectively may submit a proposal, subject to the Executive Officer's approval, which evaluates the benefit and associated criteria of runoff reduction associated with trees with respect to treatment control sizing, which evaluates and includes as appropriate the findings of the Healthy Watersheds, Resilient Baylands project,¹³ and which will be considered for incorporation into a subsequent Permit. Such a proposal shall characterize the multiple benefits of green infrastructure beyond standard designs (e.g., urban forestry), develop recommendations for Permittees to achieve the benefits (e.g., beneficial modifications to GI designs, guidelines for coordinating with work such as stream restoration, parks and urban forestry), and suggest opportunities to modify Provision C.3 language in a future Permit to better recognize broader benefits.

The proposal may include treatment control sizing and design criteria for tree-based stormwater treatment systems in combination with systems that provide additional hydrologic benefit (such as structural soils, suspended pavement systems, or other methods to provide tree rooting volume), which provide water quality and hydrologic benefit equivalent to bioretention.

- (2) Tree Interceptor Credits, as described in the 2011 BASMAA Feasibility/Infeasibility Criteria Report submitted pursuant to Provision C.3.c.i.(2)(b)(iv) of MRP 1, shall not be used to reduce the stormwater treatment required pursuant to Provision C.3.

v. Reporting

- (1) If the Permittees collectively submit a proposal pursuant to Provision C.3.d.iv, the proposal shall be submitted by no later than with the 2025 Annual Report.

¹³ The San Francisco Estuary Partnership (SFEP) and Association of Bay Area Governments (ABAG) along with several other partners (including Water Board staff) secured a U.S. EPA Water Quality Improvement Fund (WQIF) grant to pursue the Healthy Watersheds, Resilient Baylands project, which in part investigates the stormwater treatment benefit provided by trees within the urban landscape.

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.

- i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) Option 1: LID Treatment at an Offsite Location

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an Offsite Project¹⁴ in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provisions C.3.d and C.3.g, as appropriate) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) Option 2: Payment of In-Lieu Fees

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees¹⁵ to treat the remaining portion of the Provision C.3.d runoff (and comply with Provision C.3.g, as appropriate) with LID treatment measures at a Regional Project¹⁶ or Offsite Project. The Regional Project must achieve a net environmental benefit, through a net increase in impervious surface treated, and/or a net reduction in flow and/or pollutant load.

- (3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above (Options 1 and 2), all Offsite Projects and Regional Projects must be completed within three years after the end of construction of the

¹⁴ **Offsite Project** – A stormwater treatment facility that discharges into the same watershed as the Regulated Project and is located at a different public or private parcel or property (e.g., right-of-way) from the Regulated Project.

¹⁵ **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Offsite Project or Regional Project.

¹⁶ **Regional Project** – A regional or municipal stormwater treatment facility that captures runoff from a drainage area larger than the parcel on which it is located and discharges into the same watershed as the Regulated Project.

Regulated Project. However, the timeline for completion of an Offsite Project or Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Offsite Project or Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

(4) Reporting

- (a) Annual reporting on Alternative Compliance projects shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

ii. Special Projects

- (1) When considered at the watershed scale, certain land development projects characterized as smart growth or high density can either reduce existing impervious surfaces or create less “accessory” impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d for the Special Project’s drainage area that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures onsite;
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and

- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.v, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(3) Category A Special Project Criteria

- (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:
 - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace one half acre or less of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
 - (v) Have at least 85 percent coverage for the entire project site by permanent structures. The remaining 15 percent portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) Any Category A Special Project may qualify for 100 percent LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1).

- (4) Category B Special Project Criteria
- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (v) Have at least 85 percent coverage for the entire project site by permanent structures. The remaining 15 percent portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is expressed in Floor Area Ratios (FARs¹⁷) for commercial development projects, in Dwelling Units¹⁸ per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.
- (i) 50 percent Maximum LID Treatment Reduction Credit
 - a. For any commercial Category B Special Project with an FAR of at least 2:1, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two

¹⁷ **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

¹⁸ **Dwelling Unit** – A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

types of non-LID treatment systems listed in Provision C.3.e.ii.(1).

- b. For any residential Category B Special Project with a gross density¹⁹ of at least 50 DU/Ac, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - c. For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (ii) 75 percent Maximum LID Treatment Reduction Credit
- a. For any commercial Category B Special Project with an FAR of at least 3:1, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - b. For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - c. For any mixed-use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (iii) 100 percent Maximum LID Treatment Reduction Credit

¹⁹ **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public rights-of-way, recreational, civic, commercial, and other non-residential uses.

- a. For any commercial Category B Special Project with an FAR of at least 4:1, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - b. For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - c. For any mixed-use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (5) Category C Special Project Criteria (Affordable Housing)
- (a) For the purposes of attributing Affordable Housing Credits, affordable housing is defined as preserved housing with deed restrictions running at least 55 years, at rent/mortgage rates (including utilities) no greater than 30 percent of the total household income, and which meets the following income levels specified in the Federal Department of Housing and Urban Development's (HUD's) definition of affordable housing in metropolitan areas: For metropolitan areas, HUD defines Extremely Low household incomes as 0 - 30 percent of area median household income (AMI), Very Low household incomes as 31 - 50 percent of AMI, Low household incomes as 51-80 percent of AMI, and Moderate household incomes as 81-120 percent of AMI.

To be considered a Category C Special Project, a Regulated Project must additionally meet both of the following criteria:
 - (i) Be primarily a residential development project.
 - (ii) Achieve at least a gross density of 40 DU/Ac.
 - (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of four different types of credits that the Category C Special Project may qualify for, namely: Affordable Housing, Location, Density, and Minimized Surface Parking Credits.

(c) Affordable Housing Credits: A Category C Special Project may qualify for Affordable Housing Credits, according to the following criteria. The income limits that shall be used for these criteria are the most current Official State Income Limits (adjusted for household size), which are defined on the California Department of Housing and Community Development's website.^{20,21} All qualifying affordable housing DUs must be preserved housing with deed restrictions running at least 55 years, at rent/mortgage rates (including utilities) no greater than 30 percent of the total household income.

(i) To qualify for 70 percent Affordable Housing Credit:

100 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Moderate household income level (\leq 120 percent of AMI), at least 75 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Low household income level (\leq 80 percent of AMI), at least 50 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Very Low household income level (\leq 50 percent of AMI), and at least 25 percent of the project's DU's must have monthly rent/mortgage rates²² no greater than 30 percent of the Extremely Low household income level (\leq 30 percent of AMI).

(ii) To qualify for 50 percent Affordable Housing Credit:

At least 75 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Moderate household income level (\leq 120 percent of AMI), at least 50 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Low household income level (\leq 80 percent of AMI), at least 25 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Very Low household income level (\leq 50 percent of AMI), and at least 15 percent of the project's DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Extremely Low household income level (\leq 30 percent of AMI).

²⁰ <https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml>

²¹ As of December 31, 2021, they are: <https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf>

²² Including utilities.

(iii) To qualify for 25 percent Affordable Housing Credit:

At least 50 percent of the project’s DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Moderate household income level (\leq 120 percent of AMI), at least 25 percent of the project’s DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Low household income level (\leq 80 percent of AMI), at least 15 percent of the project’s DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Very Low household income level (\leq 50 percent of AMI), and at least 5 percent of the project’s DUs must have monthly rent/mortgage rates²² no greater than 30 percent of the Extremely Low household income level (\leq 30 percent of AMI).

AMI	Minimum Percentage of DUs		
	70% credit	50% credit	25% credit
Moderate (\leq 120% of AMI)	100	75	50
Low (\leq 80% of AMI)	75	50	25
Very Low (\leq 50% of AMI)	50	25	15
Extremely Low (\leq 30% of AMI)	25	15	5

(d) Location Credits: To qualify for any Location Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits in Provision C.3.e.ii.(5)(c).

(i) A Category C Special Project may qualify for the following Location Credits:

- a. 5 percent Location Credit: Located within a ¼-mile radius of an existing or planned transit hub.
- b. 10 percent Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government’s/Metropolitan Transportation Commission’s FOCUS regional planning program. FOCUS is a regional

incentive-based development and conservation strategy for the San Francisco Bay Area.

- (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
 - (iii) One hundred percent of a Category C Special Project's site must be located within the ¼-mile radius of an existing or planned transit hub to qualify for the corresponding Location Credit listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
 - (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised September 2008), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.
- (e) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits listed in Provision C.3.e.ii.(5)(c).
- (i) A Category C Special Project may qualify for the following Density Credits:
 - a. 5 percent Density Credit: Achieve a gross density of at least 40 DU/Ac.
 - b. 10 percent Density Credit: Achieve a gross density of at least 60 DU/Ac.
 - c. 15 percent Density Credit: Achieve a gross density of at least 100 DU/Ac.
 - (ii) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.
- (f) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits listed in Provision C.3.e.ii.(5)(c).

- (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
 - a. 5 percent Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
- (g) Category C Special Projects receiving final discretionary approval prior to July 1, 2022, may use the Category C Special Project criteria included in the Previous Permit.
- (6) Any Regulated Project that meets the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.).

iii. Implementation Level

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.
- (2) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.
- (3) Prior to July 1, 2023, Permittees shall implement Provision C.3.e.ii in Attachment I, which are requirements from the Previous Permit.
- (4) Beginning July 1, 2023, Permittees shall implement Provision C.3.e.ii.

iv. Reporting – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

Any Permittee choosing to require 100 percent LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

v. Reporting on Special Projects

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications, but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end

of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100 percent LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:
 - (a) Submittal Date: Date that a planning application for the Special Project was submitted.
 - (b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
 - (c) Site Acreage: Total site area in acres.
 - (d) Total Impervious Surface Created/Replaced: The total impervious surface in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1).

- (e) Gross Density in DU/Ac: Number of dwelling units per acre.
- (f) Category C Projects: Number of DUs in each AMI Category: For Category C Special Projects only, the number of preserved DUs (DUs with deed restrictions running at least 55 years) that have rent/mortgage rates (including utilities) no less than 30 percent of the Moderate, Low, Very Low, and Extremely Low area median household income levels specified in Provision C.3.e.ii.(5)(c).
- (g) Density in FAR: Floor Area Ratio.
- (h) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
- (i) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Affordable Housing, Location, Density, and Minimized Surface Parking Credits applied.
- (j) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
- (k) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.f. Alternative Certification of Stormwater Treatment Systems

- i. **Task Description** – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third-party reviewer must be a Civil Engineer, or a Licensed Architect or Landscape Architect registered in the State of California or staff of another Permittee subject to the requirements of this Permit.
- ii. **Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any

consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, CASQA, or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

- i. **Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface except where one of the following applies.

- (1) The post-project impervious surface area is less than, or the same as, the pre-project impervious surface area.
- (2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes, which extend continuously to the Bay, Delta, or flow-controlled reservoir, or, in a catchment that drains to channels that are tidally influenced.
- (3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70 percent or more impervious).²³

All HM Projects shall meet the HM Standard of either Provision C.3.g.ii or Provision C.3.g.iii.

The Hydromodification Applicability Maps developed by the Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the

²³ The Permittees' maps accepted for Order No. R2-2009-0074 were prepared using this standard, adjusted to 65 percent imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for Order No. R2-2009-0074 are accepted as meeting the 70 percent requirement.

City of Vallejo, under Order No. R2-2009-0074 remain in effect and are provided in Attachment C to this Permit.

Permittees that do not have the location-based applicability criteria (Provision C.3.g.i.(2) – (3)) shown on existing maps shall develop, or cause to be developed, new maps, overlays to existing maps, or other equivalent information that demonstrates whether a project falls under one of those two criteria (whether or not areas are subject to HM requirements). Such maps, overlays, or other equivalent information shall be acceptable to the Executive Officer and shall not be effective until accepted by the Executive Officer.

ii. HM Standard

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, and the City of Vallejo, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow²⁴ up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.
- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

²⁴ Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include U.S. EPA's Hydrologic Simulation Program—Fortran (HSPF), the U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and U.S. EPA's Storm Water Management Model (SWMM).

(3) **Standard HM Modeling:** Permittees shall use, or shall cause to be used, a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or charts developed using such a model, to design onsite or regional HM controls. The Permittees shall compare, or shall cause to be compared, the pre-project and post-project model output for a long-term rainfall record and shall show that applicable performance criteria in Provision C.3.g.ii.(1)-(3) are met. HM controls designed using the Bay Area Hydrology Model (BAHM) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual. Modifications to the BAHM shall be acceptable to the Executive Officer, shall be consistent with the requirements of this Provision, and shall be reported as required below:

- **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
- **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

iii. HM Standard – Direct Simulation of Erosion Potential

HM control shall be achieved by maintaining the erosion potential in receiving streams at a value of equal to or less than 1.0. In order to use the Provision C.3.g.iii HM Standard – Direct Simulation of Erosion Potential, for their HM Projects, the CCCWP Permittees shall distinguish the range of situations present within their jurisdictions and incorporate an associated range of sizing factors for HM controls (described below in Provision C.3.g.vi.(2)) to address that range of situations, sufficient to demonstrate that appropriately-sized HM controls in those respective situations would achieve the HM Standard. The CCCWP Permittees shall submit a Technical Report describing and justifying these criteria, subject to the Executive Officer's approval.

iv. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof:

- (1) **Onsite HM controls** are flow duration control structures, LID features and facilities, and hydrologic source controls that collectively result in the HM

Standard being met at the point(s) where stormwater runoff discharges from the project site.

- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.
- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.²⁵

v. Implementation Level

- (1) For Alameda, Santa Clara, San Mateo, and Solano Permittees, HM Projects shall meet the HM Standard in Provision C.3.g.ii immediately.
- (2) For CCCWP Permittees, HM Projects receiving final planning entitlements prior to Executive Officer approval of CCCWP's submittal pursuant to Provisions C.3.g.iii and C.3.g.vi.(2) shall use the methods and criteria specified in CCCWP's Stormwater C.3 Guidebook, 7th Edition (2017), or most current version. Subsequent to Executive Officer approval of CCCWP's submittal pursuant to Provisions C.3.g.iii and C.3.g.vi.(2), HM

²⁵ In-stream control projects require a Stream Alteration Agreement from CDFW, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

Projects shall use the methods and criteria specified (and/or acknowledged and approved) in the Executive Officer's approval or conditional approval of that submittal; CCCWP Permittees may alternatively implement the HM Standard in Provision C.3.g.ii.

vi. Reporting

- (1) New HM Applicability Maps or equivalent information prepared pursuant to Provision C.3.g.i, for those Permittees who do not have an approved Map, shall be submitted, acceptable to the Executive Officer, not later than with the 2023 Annual Report.
- (2) With the 2023 Annual Report, the CCCWP Permittees shall submit a Technical Report subject to the Executive Officer's approval, consisting of a HM Management Plan describing how the CCCW Permittees will implement the HM Standard specified in Provision C.3.g.iii. The Technical Report shall include:
 - (a) A complete suite of sizing factors – for each type of HM control that may be used in the County – that is protective of all likely site and watershed characteristics, for sites with soils in Hydrologic Soil Groups (HSG) A, B, C, and D, with equations for adjustments to the sizing factors based on geographic differences (including, but not limited to, annual rainfall intensity and frequency, land use, and other hydrologic characteristics), based on the methods and criteria in the CCCWP Hydromodification Technical Report (September 29, 2017), and pursuant to the recommendations provided in the Water Board's Response to CCCWP's Hydromodification Management Memo of November 4, 2020 (March 19, 2021). The complete suite of sizing factors shall ensure each type of HM control achieves the Provision C.3.g.iii HM Standard.

For the complete suite of sizing factors, the base case sizing factor for HM controls at sites with HSG D soils shall be 6.5 percent.²⁶

- (b) The Technical Report may optionally identify geographic areas or criteria for site-by-site determination, where the use of the prescribed methods, criteria, and suite of sizing factors may result in HM Projects failing to comply with the Provision C.3.g.iii HM Standard. For those areas, the Technical Report shall propose additional onsite mitigation measures, which when implemented in addition to the complete suite

²⁶ This is a conservative value, based on sites with project-scale built-out imperviousness in the upper watershed for the Lower Control Threshold of 0.1Q2, for soil percolation rates of 0.024 inches per hour, as presented in Table 5-7 on page 58 of the CCCWP Hydromodification Technical Report (September 29, 2017).

of sizing factors specified in Provision C.3.g.vi.(2)(a), ensure that HM controls achieve the Provision C.3.g.iii HM Standard.

The additional onsite mitigation measures include, but are not limited to: site grading to produce self-retaining areas, specific guidance on augmentation of HM control design (e.g., increasing the size of the storage layer), and increases to the HM control sizing factors.

The additional mitigation measures shall not include: reliance on land development restrictions, or on open space preservation, or on the presence of existing or future HM and LID controls located elsewhere within the catchment.

The Technical Report may additionally propose alternative or supplemental methods of compliance with the Provision C.3.g.iii HM Standard, including any combination of: undersized onsite HM controls, additional new HM controls located offsite within the same catchment as the receiving stream, and in-stream controls (e.g., as described in SCVURPPP's 2005 Hydromodification Management Plan Final Report), which when implemented together achieve the Provision C.3.g.iii HM Standard.

- (3) Reporting of HM projects shall be as described in Provision C.3.b.
- (4) Permittees allowing the use of BAHM shall report collectively, with each Annual Report, a listing, summary, and date of modifications made to the BAHM, including the technical rationale. This shall be prepared at the countywide program level and submitted on behalf of participating Permittees.
- (5) In addition, for each HM Project approved during the reporting period, Permittees shall collect and make available the following information. Information shall be reported electronically, and, where appropriate, in tabular form.
 - Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control(s);
 - Method used by the project proponent to design and size the device or method used to meet the HM Standard;
 - Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
 - For projects using standard sizing charts, a summary of sizing calculations used;

- For projects using the BAHM, a listing of model inputs; and
- For projects using custom modeling, a summary of the modeling calculations with a corresponding graph showing curve matching (existing, post-project, and post-project-with HM controls curves).

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

- i. **Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
 - (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects and for all projects implemented pursuant to Provision C.3.j that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
 - (a) The project proponent’s signed statement accepting responsibility for the operation and maintenance of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the operation and maintenance of the pervious pavement system(s) (if any), onsite, joint, and/or offsite installed stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity; or
 - (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the operation and maintenance responsibility for the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.

- (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
- (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing operation and maintenance inspections of the installed pervious pavement system(s) (if any), stormwater treatment system(s) and HM control(s) (if any).
- (4) A database or equivalent tabular format of the following:
 - (a) All pervious pavement system(s) that total 3,000 square feet or more installed at Regulated Projects, offsite, or at a Regional Project. The total square footage should not include pervious pavement systems installed as private-use patios for single family homes, townhomes, or condominiums.
 - (b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
 - (c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
- (5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each Regulated Project, offsite project, and Regional Project, and shall be made available to Water Board staff upon request:
 - (a) Name and address of the project;
 - (b) Names of the owner(s) and responsible operator(s) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and/or HM control(s);
 - (c) Specific description of the location (or a map showing the location) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and HM control(s) (if any);
 - (d) Date(s) that the pervious pavement system(s) (if any), stormwater treatment system(s), and HM controls (if any) was/were installed;
 - (e) Description of the type and size of the pervious pavement systems (if any), stormwater treatment system(s), and HM control(s) (if any) installed;

- (f) Detailed information on operation and maintenance inspections. For each inspection, include the following:
 - (i) Date of inspection.
 - (ii) Type of inspection (e.g., installation, annual, followup, spot).
 - (iii) Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers).
 - (iv) Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well) and an indication of whether the treatment system is an onsite, joint, or offsite system.
 - (v) Type of HM controls inspected.
 - (vi) Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately).
 - (vii) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, compliance schedule, administrative citation, administrative order).
- (6) A prioritized O&M Inspection Plan for inspecting all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

- (a) Inspection by the Permittee of all newly installed pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the completion of installation to ensure approved plans have been followed. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;
- (b) Inspection by the Permittee of an average of 20 percent, but no less than 15 percent, of the total number (at the end of the preceding fiscal

year) of Regulated Projects, offsite projects, or Regional Projects. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;

- (c) Inspection by the Permittee of all Regulated Projects, offsite projects, or Regional Projects at least once every five years. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient; and
- (d) For vault-based stormwater treatment systems, Permittees may accept 3rd party inspection reports in lieu of conducting Permittee operation and maintenance inspections only if the 3rd party inspections are conducted at least annually. Information from each 3rd party inspection shall be included in the database or tabular format required in Provision C.3.h.ii.(5) and each inspection shall be clearly identified as a 3rd party inspection.

Each 3rd party inspection report must clearly document the following:

- (i) Name of 3rd party inspection company.
 - (ii) Date of inspection.
 - (iii) Condition of the treatment unit(s) at the time of inspection.
 - (iv) Description of maintenance activities performed during the inspection.
 - (v) Date- and time-stamped photographs of the inside of the vault unit(s) before and after maintenance activities.
- (7) An Enforcement Response Plan (ERP) for all operation and maintenance inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:

- (a) Enforcement Procedures – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, follow-up inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
- (b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement systems, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.
- (c) Timely Correction of Identified Problems – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement systems, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary, in which case more time may be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

iii. Due Date for Implementation: Immediate.

iv. Maintenance Approvals: The Permittees shall ensure that all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement system, stormwater treatment system, or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities, but these approvals are not granted, the Permittees shall be deemed to be in compliance with Provision C.3.h. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board’s Resolution No. 94-102: Policy on the Use of

Constructed Wetlands for Urban Runoff Pollution Control and the operation and maintenance requirements contained therein.

v. Reporting

- (1) The database or equivalent tabular format required in Provisions C.3.b.ii.(4) and (5) shall be maintained by the Permittees. Upon request from the Executive Officer, information from this database or equivalent tabular format shall be submitted to Water Board staff for review. The requested information may include specific details on each inspection conducted within particular timeframes, such as several fiscal years.
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency, and include a copy of that communication with the Annual Report. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.
- (3) Each Permittee shall report the following information in the Annual Report each year:
 - (a) Total number of Regulated Projects in the Permittee's database or tabular format as of the end of the reporting period (fiscal year).
 - (b) Total number of Regulated Projects, offsite projects, and Regional Projects inspected during the reporting period (fiscal year).
 - (c) Percentage of the total number of Regulated Projects that were inspected during the reporting period (fiscal year).
 - (d) A discussion of the inspection findings for the year and any common problems encountered with various types of pervious pavement systems, treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
 - (e) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

C.3.i. Required Site Design Measures for Small Development and Redevelopment Projects and Smaller Detached Single-Family Home Projects

- i. **Task Description** – The Permittees shall require all development and redevelopment projects, which create and/or replace $\geq 2,500$ ft² to $< 5,000$ ft²

of impervious surface, and detached single-family home projects,²⁷ which create and/or replace $\geq 2,500$ ft² to $< 10,000$ ft² of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.¹⁰
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.¹⁰

This provision applies to all development projects that require approvals and/or permits issued under the Permittees' planning, building, or other comparable authority.

ii. Implementation Level

- (1) Beginning July 1, 2023, Permittees shall implement Provision C.3.i.
- (2) Prior to July 1, 2023, Permittees shall implement Provision C.3.i in Attachment I, which are requirements from the Previous Permit.

iii. Reporting – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

C.3.j. Green Infrastructure Planning and Implementation

i. Task Description – The Permittees shall continue to implement their Green Infrastructure Plans (completed during the term of the Previous Permit), as may be updated and/or supplemented to comply with this Order, for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm

²⁷ **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

drains, parking lots, building roofs, and other storm drain infrastructure elements.

- (1) The Plans are intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs and the Urban Creeks Pesticides TMDL) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters.
- (2) Over the long term, the Plans are intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.
- (3) Green infrastructure project prioritization is described in the Green Infrastructure Plans based on local characteristics and priorities, and therefore green infrastructure projects will typically be designed to achieve multiple benefits in addition to mercury and PCBs load reduction. Furthermore, this Provision establishes a separate impervious surface retrofit requirement for other-than Regulated Projects.

ii. Implementation Level

(1) Programmatic Implementation

The Permittees shall, individually or in a coordinated manner, update and/or supplement their Green Infrastructure Plans as needed to ensure that municipal processes and ordinances allow and appropriately encourage implementation of green infrastructure, and incorporate lessons learned, by:

- (a) Revising implementation mechanisms to include consideration, or reconsideration, of cooperation with non-municipal entities such as schools on green infrastructure implementation, and otherwise updating implementation mechanisms as appropriate.
- (b) Following through with the development or updates of general plans, specific plans, urban forestry plans, climate change adaptation plans, complete streets plans and other planning documents with a green infrastructure nexus to include language which is more supportive of green infrastructure implementation, as identified by Permittees in

their Green Infrastructure Plans. Upon request by Water Board staff, Permittees shall provide justifications for planning documents that they assert do not need to be updated to further support green infrastructure implementation.

- (c) Developing funding and funding mechanisms identified in the Green Infrastructure Plans, such as by working with the relevant agencies to expand the scope of transportation grants to include allocation for green infrastructure; establishing green infrastructure-based or green infrastructure-incorporating stormwater fees, including work that sets the foundation for additional future stormwater fees; establishing or increasing application review fees, and evaluating other opportunities to leverage municipal approval of private development to fund green infrastructure implementation.
- (d) Reviewing countywide green infrastructure implementation guidance documents and adapting them as necessary to account for local considerations if this has not already been completed during the Previous Permit term, and otherwise reviewing and updating general guidelines and standard specifications as appropriate.
- (e) Continuing to implement the tools developed during the Previous Permit term to track and map completed public and private green infrastructure projects, and making the information publicly available.
- (f) Continuing to adopt or amend policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this Provision, as necessary.
- (g) Continuing to conduct outreach and education as follows:
 - (i) Conduct public outreach on the requirements of this Provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
 - (ii) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this Provision and methods of implementation.
 - (iii) Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on

the requirements of this Provision and methods of implementation.

(2) Numeric Implementation

- (a) By June 30, 2027, the Permittees shall implement, or cause to be implemented, green infrastructure projects within their jurisdictions which are not already defined as Regulated Projects pursuant to Provision C.3.b, such that the impervious surface retrofits listed in Table H-1 of Attachment H are achieved.
- (b) The Permittees may meet the numeric retrofit requirements listed in Table H-1 of Attachment H on a countywide basis. If Permittees within a given county do not collectively achieve their numeric retrofit requirements, each Permittee within that county shall be separately responsible for achieving its individual retrofit requirement.
- (c) Though Permittees may meet their total individual numeric retrofit requirements on a countywide basis, each Permittee shall implement, or cause to be implemented, a green infrastructure project or projects treating no less than 0.2 acres of impervious surface within its jurisdiction, where that project is not already defined as a Regulated Project pursuant to Provision C.3.b. Alternatively, a Permittee may contribute substantially to such a green infrastructure project(s) outside of its jurisdiction and within its County.
- (d) Impervious surfaces treated by non-Regulated Projects may be counted towards the numeric requirements in Table H-1 of Attachment H.

Impervious surfaces treated by Regulated Projects, beyond the minimum required by Provisions C.3.c-d for such Regulated Projects, may be counted towards the numeric requirements in Table H-1 of Attachment H.

If a portion of the impervious surface treated by such a Non-Regulated Project or by Regulated Projects (beyond the minimum required by Provisions C.3.c-d for such Regulated Projects) is later used as part of an Alternative Compliance exchange to offset the treatment required by a Regulated Project pursuant to Provision C.3.e.i, then that portion may no longer be counted towards the Provision C.3.j.ii.(2) retrofit requirements listed in Table H-1 of Attachment H.

- (e) Projects completed after January 1, 2021, shall be counted towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.

- (f) Projects completed by June 30, 2027, shall be counted towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.

If a project is not completed by June 30, 2027, it may still count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, if it is approved and fully funded. Permittees that count such projects towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements shall certify in their Annual Reports that the projects are approved and funded by June 30, 2027.

- (g) Controls implemented to satisfy Provision C.3 requirements, including the numeric retrofit requirements specified in Provision C.3.j.ii.(2), may also be used to satisfy Provision C.11 Mercury Controls requirements, and Provision C.12 PCBs Controls requirements, as long as they satisfy the other aspects of those requirements, such as location (i.e., for PCBs, controls that are implemented in areas of old industrial land use or otherwise in areas with identified relatively high concentrations of PCBs).

- (h) Permittees may credit the acreage of impervious surface created or replaced for Regulated Road Reconstruction Projects, specified in Provision C.3.b.ii.(5), towards the Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2).

- (i) Permittees with small rural jurisdictions (e.g., whose stormwater conveyance systems are dominated by roadside ditches) may collectively submit a proposal, subject to the Executive Officer's approval, for pilot projects investigating the use of alternative green infrastructure techniques to comply with the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, with construction completed by June 30, 2027. If a project is not completed by June 30, 2027, it may still count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, if it is approved and fully funded. Permittees that count such projects towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements shall certify in their Annual Reports that the projects are approved and funded by June 30, 2027.

The proposal shall include a discussion describing the small rural jurisdiction, including density, developed versus undeveloped areas, and piped stormwater conveyances versus roadside ditches.

- (j) Permittees with existing ordinances (or that adopt new ordinances by June 30, 2023) that require Regulated Projects to treat significantly more impervious surface than the minimum required by Provision C.3.c-d, may offset their Numeric Implementation retrofit requirements

specified in Provision C.3.j.ii.(2) by a one-time credit of up to 25 percent, and by no greater than one acre. The claimed offset shall not reduce Permittees' Numeric Implementation retrofit requirements below 0.2 acres as specified in Provision C.3.j.ii.(2)(c).

In order to claim this offset, Permittees shall submit a report subject to Executive Officer approval estimating the benefit that will be realized by the adopted ordinance(s) in the current Permit term and the subsequent Permit terms (i.e., until June 30, 2032), as specified in Provision C.3.j.v.(5). The offset claimed shall be no greater than the benefit of the offset estimated in the report. Permittees shall not use the offset prior to Executive Officer approval of the report.

- (3) **Design and Other Criteria** - Green infrastructure projects built pursuant to Provision C.3.j shall:
- (a) Comply with Provision C.3.c and Provisions C.3.e-h.
 - (b) Comply with Provision C.3.d. With cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the C.3.j.i.(2)(g) approach outlined in the Previous Permit, significant amounts of run-on from adjacent areas, or other substantial constraints identified by Permittees) and with reporting in their Annual Reports, Permittees may use the Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis Green Infrastructure Facility Sizing for Non-Regulated Street Projects submitted in June 2019, to size Non-Regulated green streets projects. If so, Permittees must comply with the Water Board's June 21, 2019, conditional approval of that submittal, which provides qualifiers to, and the conditions under which, the alternative sizing criteria may be used for Non-Regulated green streets projects.
- (4) **Long-Term Green Infrastructure Implementation**
- (a) The Permittees and their representatives may, together with Water Board staff and impartial science experts (e.g., SFEI, SFEP, U.S. EPA Region 9), collectively form a Technical Working Group (TWG) to discuss long-term green infrastructure goals and recommend long-term percentage reductions in Permittees' impervious surfaces, at individual, countywide and regional scales. The TWG should prioritize discussion of long-term green infrastructure goals for development and redevelopment projects not already captured by Provision C.3.b, and in particular, public road and right of way reconstruction projects that are not already defined as Regulated Projects by Provision C.3.b.ii.(5). The TWG should additionally review BMPs and

performance metrics, and should consider linkages to climate change impacts and resiliency.

- (b) Prior to the submittal of a report containing the TWG's recommendations for long-term percentage reductions in Permittees' impervious surfaces – as prescribed by Provision C.3.j.v.(6) – the TWG should meet at a minimum biannually, and subsequent to that submittal should meet at a minimum annually.

iii. No Missed Opportunities

Each Permittee shall:

- (1) Continue to maintain a list of green infrastructure projects, public and private, that are planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.
- (2) Submit the list with each Annual Report and a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

iv. Participate in Processes to Promote Green Infrastructure

- (1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.
- (2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.

v. Tracking and Reporting Progress

- (1) The Permittees shall continue to implement the existing regionally-consistent tracking and mapping tools developed pursuant to Provision C.3.j.i.(2).(d) of the Previous Permit to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met. The tracking and mapping tools shall be used by Permittees to inform issues relevant to program management, such as life cycle costs, asset management, operation and maintenance frequency, and beneficial design changes.
 - (a) Non-regulated green infrastructure projects built pursuant to Provision C.3.j shall be tracked and mapped in the same manner as Regulated Projects. These projects shall be reported in a separate table from Regulated Projects.
 - (b) The tracking and mapping tools shall include a component that is available to the public, which is advertised on individual Permittee websites and on County stormwater program websites, and as appropriate is advertised in other locations. This component must include the following basic information: a brief description of design (e.g., whether bioretention or bioswale), location, land use type, and area treated. If the tools contain additional information which has not been made available to the public such as detailed design information, incurred or planned O&M costs and O&M frequency, condition assessments, and pollutant loads treated, that information shall be made available to Water Board staff upon request.
 - (c) The Permittees shall certify in the 2023 Annual Reports that the tracking and mapping tools have been completed and are being implemented.
 - (d) In each Annual Report, Permittees shall provide summary reports on the implementation of the tracking and mapping tools and shall provide a link to the component which is available to the public.
- (2) In the 2024 and 2026 Annual Reports, report on updates, addenda, and changes to their programmatic implementation, including, but not limited to, the items listed in Provision C.3.j.ii.(1).
- (3) In each Annual Report, Permittees shall report on progress made towards the retrofit requirements described in Provision C.3.j.ii.(2).

- (4) With the 2026 Annual Reports, Permittees shall provide a summary of lessons learned to-date with regard to Provision C.3.j.ii.(1), including topics such as operation and maintenance, sizing, infiltration and other design criteria for stormwater treatment controls, implementation of tracking and mapping tools, cooperation with non-municipal entities, regional project efforts, funding initiatives and opportunities to leverage municipal approval of private development, education and outreach, and development or updates of plan documents with a green infrastructure nexus. In the summary, Permittees shall also discuss attainment of the numeric retrofit requirements prescribed in Provision C.3.j.ii.(2).

In that summary, as applicable, Permittees shall report on how they have addressed deficiencies identified in Provision C.3.j.ii.(1).

- (5) Pursuant to Provision C.3.j.ii.(2)(i), Permittees whose jurisdictions are dominated by rural areas may collectively submit a proposal, subject to the Executive Officer's approval, for the use of alternative green infrastructure techniques. This proposal shall be submitted by no later than with the 2023 Annual Reports.
- (6) Each Permittee that wishes to use the one-time offset specified in Provision C.3.j.ii.(2)(j) shall submit a report estimating the benefit realized by the adopted ordinance(s) in the current Permit term, and until June 30, 2032, by no later than with the 2023 Annual Report, subject to Executive Officer approval. Permittees shall not use the offset prior to Executive Officer approval of the Report. The benefit of the estimated offset shall be no less than the offset claimed during the current Permit term.

In each Annual Report, each Permittee claiming the offset shall report on the acreage of retrofit produced by the implementation of the offset in that Fiscal Year, as well as the cumulative acreage of retrofit produced by the implementation of the offset up to that point in time during the current Permit term.

- (7) By no later than with the 2025 Annual Reports, the Permittees shall collectively submit a report summarizing any TWG efforts and recommendations, as specified in Provision C.3.j.ii.(4).
- (8) Pursuant to Provision C.3.j.ii.(2)(f) and Provision C.3.j.ii.(2)(i), Permittees shall certify in the 2027 Annual Report that any projects counting towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, which have not been completed by June 30, 2027, have been approved and fully funded by June 30, 2027.

Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects

Project No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Total Impervious Surface Created/ Replaced	Gross Density DU/Ac	Category C Projects: Number of DUs in each AMI Category	FAR	Special Project Category	LID Treatment Reduction Credit	Stormwater Treatment Systems

Project No.: Number of the Special Project as it appears in Table 3.1.

Permittee: Name of the Permittee in whose jurisdiction the Special Project will be built.

Address: Address of the Special Project; if no street address, state the cross streets.

Submittal Date: Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

Description: Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

Site Total Acreage: Total site area in acres.

Total Impervious Surface Created/Replaced: The total impervious surfaced in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1).

Gross Density in DU/Ac: Number of dwelling units per acre.

Category C Projects: Number of DUs in each AMI Category: For Category C Special Projects only, the number of preserved DUs (DUs with deed restrictions running at least 55 years) that have rent/mortgage rates (including utilities)

no less than 30 percent of the Moderate, Low, Very Low, and Extremely Low area median household income levels specified in Provision C.3.e.ii.(5)(c).

FAR: Floor Area Ratio.

Special Project Category: For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Affordable Housing, Location, Density, and Minimized Surface Parking Credits available.

Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.

C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites that could reasonably be considered to cause or contribute to pollution of stormwater runoff. Permittees shall conduct inspections, effective follow-up, and enforcement to abate potential and actual non-stormwater discharges, consistent with each respective Enforcement Response Plan. These combined efforts will prevent the discharge of pollutants and impacts to beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

- i. **Task Description** – Permittees shall have sufficient legal authority to inspect, require effective stormwater pollutant control, and implement progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.
- ii. **Implementation Level** – Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites that may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial facilities to address pollutant sources associated with outdoor process and manufacturing areas; outdoor material storage areas; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas, for example, areas used to wash restaurant equipment and mats,; outdoor drainage from indoor areas; rooftop equipment; vehicle fueling activities; contaminated and erodible surface areas; and other sources determined by the Permittees or the Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

- i. **Task Description** – Permittees shall continue to update and implement an Inspection Plan that will serve as a prioritized inspection workplan. This Inspection Plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

ii. Implementation Level

(1) Facilities to Prioritize for Inspection

Commercial and industrial facilities with the functional aspects and types described below, and other facilities identified by the Permittees as reasonably likely to contribute to pollution of stormwater runoff, shall be prioritized for inspection on the basis of the potential for water quality impact using criteria such as pollutant sources on site, use of pollutants of concern, proximity to a waterbody, and the enforcement history of potential discharges and actual discharges at the facility. Permittees may use a variety of sources to develop and update the business inspection prioritization, including, but not limited to, business license applications, tax records, and inspectors' observations. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plan:

- (a) Sites with the following functions or facilities that may be sources of pollutants when exposed to stormwater:
 - (i) Outdoor process and manufacturing areas
 - (ii) Outdoor material storage areas
 - (iii) Outdoor waste storage, handling, and disposal areas
 - (iv) Outdoor vehicle and equipment storage and maintenance areas
 - (v) Outdoor wash areas
 - (vi) Outdoor drainage from indoor areas
 - (vii) Fueling Areas
 - (viii) Rooftop equipment
 - (ix) Other sources determined by the Permittee or Water Board as reasonably likely to contribute to pollution of stormwater runoff.
- (b) Sites that support industrial and commercial activities that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges, including:
 - (i) Industrial facilities, as defined at 40 CFR 122.26(b)(14), including facilities subject to the Statewide NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
 - (ii) Vehicle Salvage yards;

- (iii) Metal and other recycled materials collection facilities, and waste transfer facilities;
 - (iv) Vehicle mechanical repair, maintenance, fueling, or cleaning facilities;
 - (v) Nurseries and greenhouses;
 - (vi) Restaurants and other food service businesses at which food is prepared or that have onsite eating and drinking areas for customers;
 - (vii) Supermarkets or large grocery stores with outdoor waste storage or cardboard compacting areas;
 - (viii) Building trades facilities or yards, corporation yards;
 - (ix) Building material retailers and storage;
 - (x) Plastics manufacturers; and
 - (xi) Other facilities designated by the Permittee or Water Board to be reasonably likely to contribute to pollution of stormwater runoff.
- (2) Inspection Plan – The Inspection Plan shall be updated annually and shall contain the following information:
- (a) A description of the process for prioritizing inspections and frequency of inspections. The prioritization criteria shall assign a more frequent inspection schedule to the highest priority facilities per Provision C.4.b.ii.(1). If any geographical areas are to be targeted for inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan.
 - (b) Assign appropriate inspection frequency for each industrial and commercial facility based on the priority established in Provision C.4.b.ii.(2)(a), potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.
 - (c) A mechanism to include new businesses that warrant inspections.
 - (d) Total number and a list of all industrial and commercial facilities requiring inspections, within each Permittee’s jurisdiction, based on the prioritization criteria established in Provision C.4.(b)ii.(2)(a). This list shall be updated annually.
 - (e) List of facilities scheduled for inspection each fiscal year of the MRP permit term. Each fiscal year’s inspection list shall be added to the Inspection Plan at the beginning of the fiscal year as part of the annual

update. Previous fiscal years' inspection lists shall remain in the Inspection Plan.

- (f) If a Permittee relies on multiple entities to perform business and commercial inspections, a list of the entities and their responsibilities with regard to this Permit. Describe how the Permittee oversees and coordinates the entities performing inspections and assures that all sites with the potential to pollute stormwater are inspected.
- (3) Record Keeping – For each facility identified in Provision C.4.b.ii.(2)(d), the Permittee shall maintain a database or equivalent tabular system of at least the following information:
- (a) Name and address of the business and local business operator;
 - (b) A brief description of business activity or pollutant source, including SIC or NAICS code. Examples: outdoor process/manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, rooftop equipment, outdoor drainage from indoor areas, and use of mobile businesses for outdoor fueling, washing, etc.;
 - (c) Inspection priority and inspection frequency; and
 - (d) Whether facility requires coverage under the Industrial General Permit.

iii. Reporting

- (1) Permittees shall include the following information in the 2023 Annual Report:
 - (a) A brief description of which Permittee entity or entities are responsible for reviewing and approving business license applications or a link to the Permittee's website for business license applications.
- (2) Permittees shall make the list required by Provision C.4.b.ii.(2)(d) available upon Water Board request.

C.4.c. Enforcement Response Plan

- i. Task Description** – Each Permittee shall implement and update, as needed, its Enforcement Response Plan (ERP), a reference document to guide inspection staff in achieving timely and effective compliance from all commercial and industrial site operators.

ii. **Implementation Level** – The ERP shall contain the following:

- (1) **Enforcement Procedures** – A description of the Permittee’s enforcement and compliance procedures, from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.
- (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
- (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual non-stormwater discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.
- (4) **Referral and Coordination with Other Agencies** – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.4.d. Inspections

i. **Task Description** – Each Permittee shall conduct inspections according to the Inspection Plan in Provision C.4.b.ii.(2) and the ERP in Provision C.4.c.ii. to enforce its ordinance to prevent stormwater pollution.

ii. **Implementation Level**

(1) Inspections – Inspections shall be conducted to include at least the following activities:

- (a) Observations for appropriate BMPs to prevent stormwater runoff pollution, or unauthorized or illicit discharge;
- (b) Observations for evidence of unauthorized or illicit discharges, illicit connections, and potential discharge of pollutants to stormwater by the Discharger or contractors, such as and including mobile businesses, that operate on the facility;
- (c) Observations for noncompliance with Permittee ordinances and other local requirements; and
- (d) Verification of coverage under the Industrial General Permit, if applicable.

(2) Record Keeping – Permittees shall maintain adequate records to demonstrate compliance and appropriate follow-up enforcement responses for facilities inspected. Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial and commercial site inspections:

- (a) Name of facility/site inspected
- (b) Inspection date
- (c) Industrial General Permit coverage required (Yes or No)
- (d) Compliance status
- (e) Specific problems, including inadequate and ineffective BMPs
- (f) Type of enforcement (if applicable)
- (g) Problem resolution date
- (h) Additional comments

The electronic database or equivalent tabular system and any supporting documentation shall be made readily available to Water Board staff or its representative during inspections, audits, or upon request.

- (3) Data Evaluation – Permittees shall evaluate the frequency of potential and actual non-stormwater discharges by business category. Note trends and, as needed, implement focused inspections or education in subsequent years to address trends.

iii. Reporting

- (1) Permittees shall include the following information in each Annual Report:
 - (a) Number of inspections conducted;
 - (b) Number of each type of enforcement action, as listed in each Permittee’s ERP, issued;
 - (c) Number of enforcement actions or discrete number of potential and actual discharges fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner; and
 - (d) Frequency of potential and actual non-stormwater discharges by business category.
- (2) Permittees shall make the list of facilities required to have coverage under the Industrial General Permit, but that have not filed for coverage, available upon Water Board request. For facilities added to the list or re-inspected during this Permit term, the list shall include the date when the facility was first identified and the date when it was most recently inspected or evaluated.

C.4.e. Staff Training

- i. **Task Description** – Permittees shall provide focused training for industrial and commercial site inspectors and illicit discharge detection and elimination inspectors annually. Trainings may be program-wide, region-wide, or Permittee- specific.
- ii. **Implementation Level** – At a minimum, provide inspection training, within the 5-year term of this Permit, in the following topics:
 - (1) Urban runoff pollution prevention;
 - (2) Inspection procedures;
 - (3) Business Inspection Plan;
 - (4) Enforcement Response Plan;
 - (5) Illicit Discharge Detection and Elimination; and
 - (6) Appropriate BMPs to be used at different industrial and commercial facilities.

iii. Reporting – The Permittees shall include the following information in each Annual Report:

- (1) Dates of training;
- (2) Training topics covered;
- (3) Total number and percentage of industrial and commercial site inspectors attending training; and
- (4) Total number and percentage of illicit discharge detection and elimination inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to detect and control illicit discharges not otherwise controlled under Provisions C.4. – Industrial and Commercial Site Controls, C.6. – Construction Site Controls, and C.17 – Discharges Associated with Unsheltered Homeless Populations. Permittees shall implement an illicit discharge program that includes active surveillance and centralized complaint collection and follow-up to detect and eliminate illicit discharges into the MS4. Permittees shall maintain a complaint tracking and follow-up data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

i. **Task Description** – Permittees shall have the legal authority to prohibit and control illicit discharges and implement progressively stricter enforcement to achieve expedient compliance.

ii. Implementation Level

- (1) Permittees shall have adequate legal authority to address illicit discharges to the MS4, including, but not limited to, the following:
 - (a) Discharges of sewage, trash, or other potentially polluting or hazardous materials;
 - (b) Discharges of wash water resulting from the cleaning of exterior surfaces, pavement, equipment, and other facilities of any commercial business, or any other public or private facility, including discharges from mobile businesses;
 - (c) Discharges of runoff from material storage areas, including those containing chemicals, fuels, or other potentially polluting or hazardous materials;
 - (d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
 - (e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes;
 - (f) Discharges of food-related wastes (e.g., grease, fish processing wastes, restaurant kitchen mat and trash bin wash water); and
- (2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to the MS4.

- (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than stormwater to the MS4.
- (4) Permittees shall have adequate legal authority to hold mobile businesses, and the businesses, property managers, property owners, and other associated entities that hire a mobile business, responsible for stormwater pollution discharged by the mobile business operating at their location.

C.5.b. Enforcement Response Plan (ERP)

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective abatement of illicit discharges and compliance from responsible parties.
- ii. **Implementation Level** – The ERP shall contain the following:
 - (1) **Enforcement Procedures** – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.
 - (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
 - (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and/or actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.

- (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.5.c. Spill, Dumping, and Complaint Response Program

- i. **Task Description** – Each Permittee shall implement a program to respond to spills, dumping, and complaints.

- ii. **Implementation Level**

- (1) Each Permittee shall have a central contact point for the public and Permittee’s staff to report spills, dumping, and complaints. At a minimum, this central contact point shall include a phone number. Permittees shall also include, as feasible, a user-friendly web address for reporting for spills and dumping or a link to a web-based reporting application.
- (2) Each Permittee shall publicize the phone number on its website, and, if used, a web reporting address or link to a web-based reporting application, to the Permittee’s staff and the public. The contact information on the Permittee’s website shall be kept up-to-date, and updated at least annually when changed. This central contact point shall be readily searchable and accessible on the Permittee’s website.
- (3) Each Permittee shall require the municipal staff conducting routine maintenance and inspection activities to report illicit discharges found during their activities to the central contact point so that illicit discharge staff can investigate and track.
- (4) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and/or phone tree for the staff responsible for the spill and dumping response program. At a minimum, this flow chart and/or phone tree shall identify staff or positions responsible for receiving the complaints and investigating and abating the complaints.
- (5) Each Permittee shall also maintain and update, as needed, a spill, dumping, and complaint response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittee’s immediate capabilities.

- (6) Each Permittee shall conduct reactive inspections in response to spill, dumping, and complaint reports and shall also conduct follow-up inspections, as needed, to ensure that corrective measures have been effectively implemented to achieve and maintain compliance. The start of the investigation of a spill or discharge shall not exceed 3 business days from the date the complaint was received by the Permittee. If additional time is required, the Permittee shall document the rationale for the delay.

iii. Reporting

- (1) Permittees shall provide the following information in the 2024 and 2026 Annual Reports:
 - (a) The spill, dumping, and complaint reporting phone number and, if used, a web reporting address or a link to a web-based reporting application;
 - (b) A screen shot of the Permittee's website showing the central contact point; and
 - (c) A discussion of how the central contact point – spill and dumping reporting phone number and, if used, the web address or web-based reporting application – is being publicized to Permittees' staff and the public.
- (2) Copies of the phone trees and contact lists required in Provision C.5.c.ii (4) and (5) shall be provided as attachments to, or links in, the 2026 Annual Report. The lists may be redacted to remove references to private cell phone numbers. The unredacted phone trees and contact lists shall be made available to Water Board staff or representatives during audits or inspections, and upon request

C.5.d. Tracking and Case Follow-up

- i. **Task Description** – All incidents or discharges reported to the spill, dumping, and complaints central contact point, that might discharge into the MS4, shall be logged to track follow-up and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems and inter/intra-agency coordination, where appropriate. It is not necessary to track and report data according to this provision if they are tracked and reported according to State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.
- ii. **Implementation Level** – Maintain records for tracking and follow-up to water quality spills, dumping, and complaints that might discharge into the MS4 in an electronic database or equivalent tabular system.

The water quality spills, dumping, and complaint tracking system shall contain the following information:

- (1) Complaint information:
 - (a) Date that complaint is received by the Permittee;
 - (b) Type of pollutant; and
 - (c) Problem Status (potential or actual discharge).
- (2) Investigation information:
 - (a) Date and time investigation of spill or discharge started;
 - (b) Date and time response to illegal dumping report or complaint started;
 - (c) Agency, department, or other entities responding to the complaint or discharge;
 - (d) Type of pollutant;
 - (e) Identify the entered storm drain or approximate location, and/or receiving water;
 - (f) Date and time abated; and
 - (g) Type of enforcement based on the Permittee's ERP.
- (3) Responses to discharges or dumping associated with unsheltered populations, including those living in homeless encampments or vehicles, shall be coordinated with the Permittee's Provision C.10 Trash Control efforts, Provision C.17 Homeless Encampment Discharge Control efforts, and other agencies and entities addressing homelessness issues, as appropriate.

iii. Reporting

- (1) Permittees shall provide the following information in the Annual Report:
 - (a) Number of discharges reported;
 - (b) Number of discharges reaching storm drains and/or receiving waters;
 - (c) Number of discharges resolved in a timely manner; and
- (2) The electronic database or equivalent tabular system and supporting documentation shall be made available to Water Board staff or representatives during audits or inspections, and upon request.

C.5.e. Control of Mobile Sources

- i. Task Description** – Permittees shall have oversight and control of pollutants associated with mobile businesses.
- ii. Implementation Level** – Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.

(1) The program shall include the following:

- (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, including, but not limited to, automobile washing, vehicle fueling, power washing, steam cleaning, graffiti removal, and carpet cleaning;
- (b) Implementation of an enforcement strategy that specifically addresses mobile businesses;
- (c) Updating and maintaining a mobile business inventory at least annually;
- (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee's jurisdiction; and
- (e) Inspection of mobile businesses.

(2) Permittees may cooperate countywide and/or region-wide with the implementation of their programs for mobile businesses, including sharing of mobile business information, BMP requirements, enforcement action information, and educational materials.

iii. Reporting

(1) In the 2026 Annual Report, each Permittee shall provide the following:

- (a) Minimum standards and BMPs for each of the various types of mobile businesses;
- (b) Enforcement strategy;
- (c) A list and summary of the countywide or regional activities conducted, including BMP requirements, enforcement action information, and educational materials (Permittees' annual reports may refer to the countywide or regional reports for this information);
- (d) A list and summary of specific outreach events and education conducted for each type of mobile business operating within the Permittee's jurisdiction; and
- (e) A copy of the most recent version of the mobile business inventory.

- (2) In each Annual Report, each Permittee shall include at least the following:
 - (a) The total number of inspections conducted of mobile businesses;
 - (b) The number of each type of mobile business inspected; and
 - (c) A summary of the enforcement actions taken against mobile businesses during the reporting year.

C.5.f. Municipal Separate Storm Sewer System (MS4) Map

- i. **Task Description** – Each Permittee shall make the current map(s) of its MS4 available to the public.

Permittees shall identify information missing from the current MS4 maps and develop a plan and schedule to compile additional storm sewer system information, considering the potential to identify component locations, size or specifications, materials of construction, and condition. This information will be used to update Permittee maps and databases.

- ii. **Implementation Level**

- (1) Current MS4 Maps – Permittees shall make current maps of the MS4 publicly available, either electronically or in hard copy. Public availability shall be made through a single point of contact that is convenient for the public, such as a staffed counter or web-accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.
- (2) Updates to MS4 Maps – During the current Permit term, each Permittee shall complete the following:
 - (a) Determine information missing from the Permittee’s current MS4 map(s), which may include Oakland Museum watershed maps, existing MS4 maps or drawings in the Permittee files, or other storm sewer system information databases.
 - (b) Identify and make available upon Water Board request maps of the storm sewer system and other stormwater controls installed after publication of the Oakland Museum watershed maps within the Permittee's jurisdictional area.
 - (c) Develop a plan and schedule for updating the Permittee’s storm sewer system information. Permittees or countywide stormwater programs may work together or with the Oakland Museum of California to develop a plan and schedule for updating existing information, maps, drawings, and databases. The plan will consider the potential to identify storm sewer system component locations, size or specifications, materials of construction, and condition.

iii. Reporting

- (1) In the 2024 Annual Report, Permittees shall discuss how they make MS4 maps available to the public and how they publicize the availability of the MS4 maps.
- (2) Submit a plan and schedule with the 2026 Annual Report to update existing storm sewer system information as described above.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with follow-up and enforcement consistent with each Permittee's respective Enforcement Response Plan, to prevent construction site discharges of pollutants into the storm drains. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers. Each Permittee shall in its reporting demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

C.6.a. Legal Authority for Effective Site Management

i. **Task Description** – Permittees shall have the authority to require effective stormwater pollutant controls to prevent discharge of pollutants into the storm drains, and to implement progressive enforcement to achieve expedient compliance and cleanup at all public and private construction sites.

ii. Implementation Level

- (1) Permittees shall have the legal authority to require, at all construction sites year-round, effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-stormwater management through all phases of construction (including, but not limited to, grubbing, clearing, site grading, filling, excavation, leveling, building, landscaping, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
- (2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and cleanup at all construction sites year-round.

C.6.b. Enforcement Response Plan (ERP)

i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance at all public and private construction sites.

ii. Implementation Level – The ERP shall contain the following:

- (1) **Enforcement Procedures** – A description of the Permittee's procedures from discovery of problems through confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.

- (2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
- (3) Timely Correction of Potential and Actual Discharges – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.
- (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.6.c. Best Management Practices Categories

- i. **Task Description** – Permittees shall require all construction sites to have site-specific, and seasonally- and phase-appropriate, effective BMPS in the following six categories:
 - (1) Erosion Control
 - (2) Run-on and Runoff Control
 - (3) Sediment Control, including entrance/exit and perimeter controls
 - (4) Active Treatment Systems, as necessary
 - (5) Good Site Management, including materials and waste management

(6) Non-Stormwater Management

ii. Implementation Level

The BMPs targeting specific construction site pollutants within the six categories listed in Provision C.6.c.i. shall be site-specific. Permittees may select site-specific BMPs, or BMP combinations, from resources such as:

- (1) CASQA BMP Handbook, Construction, December 2019
- (2) Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, May 2017, and addenda
- (3) Other BMPs shown to provide equivalent or better protection

C.6.d. Plan Approval Process

i. Task Description – Permittees shall review erosion control plans for consistency with local requirements and the appropriateness and adequacy of proposed BMPs for each site before issuing grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for permit coverage under the Construction Stormwater General Permit.

ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

- (1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in Provision C.6.c.i. are planned.²⁸
- (2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction Stormwater General Permit.
- (3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in Provision C.6.c.i. in

²⁸ If SWPPPs do not include erosion control plan drawings for use by construction workers and managers at the site, erosion, sediment, and site control plans and drawings must also be submitted and reviewed.

preventing the discharge of construction pollutants into the storm drain. Permittees shall require timely corrections of all actual and potential discharges observed.

ii. Implementation Level

(1) Wet Season Notification

By September 1 of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil, hillside projects, and high priority sites to prepare for the upcoming wet season.

(2) Frequency of Inspections

Inspections shall be conducted monthly during the wet season²⁹ at the following sites:

- (a) All construction sites disturbing one or more acre of land;
- (b) All hillside projects (based on the Permittee's map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with ≥ 15 percent slope) disturbing greater than or equal to 5,000 square feet; and
- (c) High Priority Sites – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:
 - (i) Soil erosion potential or soil type;
 - (ii) Site slope;
 - (iii) Project size and type;
 - (iv) Sensitivity of receiving waterbodies;
 - (v) Proximity to receiving waterbodies;
 - (vi) Non-stormwater discharges; and
 - (vii) Any other relevant factors as determined by the local agency or the Water Board.

²⁹ For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

(3) Contents of Inspections

Inspections shall focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in Provision C.6.c.i.

Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

- (a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from Provision C.6.d.ii.(1));
- (b) Assessment of the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in Provision C.6.c.i;
- (c) Visual observations for:
 - (i) Actual discharges of sediment and/or construction-related materials into storm drains and/or waterbodies.
 - (ii) Evidence of sediment and/or construction-related materials discharges into storm drains and/or waterbodies.
 - (iii) Illicit connections, and
 - (iv) Potential illicit connections.
- (d) Education on stormwater pollution prevention, as needed.

(4) Tracking

All inspections shall be recorded on a written or electronic inspection form. Inspectors shall follow the ERP for all actual and potential discharges discovered during the inspection.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

- (a) Site name;
- (b) Inspection date;
- (c) Weather during inspection;
- (d) The department, agency, or other entity performing the inspection.

- (e) Enforcement Response Level (Use ERP);
- (f) Problem(s) observed using Illicit Discharge and the six BMP categories listed in Provision C.6.c.i;
- (g) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
- (h) Comments, which shall include all rationale for longer compliance times, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

- (1) Each Permittee shall summarize the following information in the Annual Report:
 - (a) Total number of construction sites requiring inspections during at least part of the Permit year;
 - (b) Total number of active hillside sites disturbing less than one acre of soil requiring inspection;
 - (c) Total number of active sites disturbing one acre or more of soil;
 - (d) Total number of active sites disturbing less than one acre of soil identified as High Priority sites in Provision C.6.e.ii.(2)(c) requiring inspections;
 - (e) Total number of inspections conducted;
 - (f) Number of enforcement actions taken by type, organized by the categories in each Permittee's ERP;
 - (g) Number of illicit discharges, actual and potential, of sediment or other construction-related materials; and
 - (h) Number of enforcement actions or discrete number of potential and actual discharges fully corrected prior to the next rain event, but no longer than 10 business days after the potential and actual discharges³⁰ are discovered or otherwise considered corrected in a timely, though longer period.
- (2) In the 2027 Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in Provision C.6.e.ii.(4). This evaluation shall include findings on the

³⁰ Permittees who track by discrete potential and actual discharges shall report by discrete discharges. Permittees who track by enforcement actions shall report by enforcement actions

program's strength, comparison to previous years' results, as well as areas that need more focused education for site owners, operators, and developers the following year.

- (3) An electronic copy of the construction site and inspection database(s) shall be made available to the Water Board during inspections, audits, or upon request.

C.6.f. Staff Training

- i. **Task Description** – Permittees shall provide training or access to training for all staff conducting construction stormwater inspections.
- ii. **Implementation Level** – Permittees shall provide training at least every other year to staff responsible for conducting construction site stormwater inspections. Training topics shall include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and the ERP.
- iii. **Reporting** – Permittees shall include in each Annual Report the following information:
 - (1) Dates of training;
 - (2) Training topics covered;
 - (3) Total number of inspectors, including both municipal and non-municipal staff; and
 - (4) The number of inspectors attending each training, including both municipal and non-municipal staff.

If there was no training in that year, so state.

C.7. Public Information and Outreach

Each Permittee shall increase the awareness of the community, including diverse socioeconomic groups, government elected officials and staff, and ethnic communities, regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate these impacts; positively influence the public's waste disposal and runoff pollution generation behavior; and involve various citizens in mitigating the impacts of stormwater pollution. Outreach required in other provisions may be conducted under Provision C.7.

C.7.a. Outreach Campaigns

i. **Task Description** – Permittees shall continue to participate in or contribute to outreach campaigns, with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audiences.

ii. Implementation Level

- (1) Target a broad audience with a minimum of one outreach campaign with specific stormwater runoff pollution prevention messages. The outreach campaign(s) should utilize various electronic and print media, and paid and free media, including social media, as practicable, to best reach different demographics. The outreach campaign(s) may be coordinated regionally or countywide.
- (2) Permittees shall conduct timely evaluations to measure the effectiveness of the outreach campaigns. Effectiveness assessment/evaluation may be done regionally or countywide.

C.7.b. Stormwater Pollution Prevention Education

i. **Task Description** – Permittees shall continue to maintain a point of contact to provide the public with stormwater pollution prevention information.

ii. Implementation Level

- (1) Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively, and Permittees may combine this function with the spill and dumping complaint central contact point required in Provision C.5 – Illicit Discharge Detection and Elimination.
- (2) Each Permittee shall place and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website. In lieu of posting the detailed informational pages directly on their individual websites, Permittees may choose to

provide links from their websites to the countywide program’s websites and/or websites for other collaborative efforts between Permittees. Each Permittee shall publicize its website.

C.7.c. Public Outreach and Citizen Involvement Events

- i. **Task Description** – Public outreach shall include a variety of pollution prevention messages such as for car washing; proper use, storage, and disposal of vehicle waste fluids; household waste materials disposal; pesticide use; and trash. Public outreach events may include venues such as fairs, shows, workshops, and household waste collection events. Citizen involvement events may include venues such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, storm drain inlet marking, riparian restoration activities, and community grants.
- ii. **Implementation Level** – Each Permittee shall annually participate and/or host a mix of public outreach and citizen involvement events according to its population, as shown in the table below:

Table 7.1 Public Outreach and Citizen Involvement Events³¹

Permittee Population	Number of Events
< 10,000	2
10,001– 40,000	4
40,001 – 100,000	5
100,001 – 175,000	7
175,001 – 250,000	8
> 250,000	10
Non-population-based Permittees	6

C.7.d. Watershed Stewardship Collaboration

- i. **Task Description** – Permittees shall individually or collectively collaborate with other organizations to encourage and support community watershed stewardship activities. This may include collaborating with community groups such as local watershed forums and “friends of creek” groups; encouraging and supporting the development of grassroots watershed groups; or engaging

³¹ Permittees may claim individual credits for events in which their Countywide Program participates, that the County Program supports or hosts, or other collaborative efforts, provided such events are publicized in the Permittee’s jurisdiction.

existing groups, such as neighborhood associations, in watershed stewardship activities. This may also include collaboration with other organizations that benefit the health of the watershed, such as ReScape California, or collaboration to introduce community watershed stewardship activities into organizations focused on other environmental or sustainability efforts.

- ii. **Implementation Level** – Annually demonstrate effort.

C.7.e. School-Age Children Outreach

- i. **Task Description** – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-aged children (K through 12).
- ii. **Implementation Level** – Implement annually and demonstrate effectiveness of efforts through assessment.

C.7.f. Outreach to Municipal Officials

- i. **Task Description** – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.
- ii. **Implementation Level** – At least once per permit cycle, or more often.

C.7.g. Tracking and Reporting

- i. **Task Description** – Permittees shall electronically track outreach efforts in a table or spreadsheet. The tracking document should include, at a minimum:
 - (1) Outreach event or campaign type;
 - (2) Dates;
 - (3) Target Audience;
 - (4) Number of participants and number of participants compared to previous events, if applicable;
 - (5) Location(s) or website address, as applicable;
 - (6) Contact information for venues and coordinators, if applicable;
 - (7) Materials and activities, as applicable;
 - (8) Level of effort;
 - (9) Evaluation of effectiveness;
 - (10) Lessons learned; and

(11)Planned changes in approach or implementation, if any.

ii. Implementation Level – The tracking document shall be made available to the Water Board staff during inspections, audits, or upon request.

iii. Reporting

- (1) In each Annual Report, each Permittee (or the Countywide Program, if the tracking was done countywide or regionally) shall submit a table listing the types of outreach programs implemented during that Permit year along with a brief description. The table should be a cumulative table showing the number, if applicable, of each type of outreach campaigns or events occurring during each Permit year.
- (2) In the 2023 Annual Report, each Permittee shall list the Permittee’s point of contact and the URL for its stormwater pollution website. The Permittee shall discuss how the point of contact and website are publicized and maintained and certify that it has a website dedicated to providing and maintaining information on stormwater issues, watershed characteristics, and stormwater pollution prevention approaches. Changes in this information shall be reported in the Annual Report for the year in which the change occurs.
- (3) In the 2027 Annual Report, each Permittee (or the Countywide Program, if the effectiveness assessment/evaluation was done countywide or regionally) shall submit a summary of the effectiveness assessments/evaluations by type of outreach described in Provisions C.7.a through C.7.f. The summary shall include plans for continuing or modifying each outreach type during the next permit term.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

All Permittees shall comply with all the monitoring requirements in this Provision. Permittees may choose any of the following mechanisms, or a combination of these mechanisms, to meet the monitoring requirements:

- i. **Regional Collaboration.** Permittees are encouraged to continue contributing to the Regional Monitoring Collaborative (RMC), which coordinates water quality monitoring conducted by all the Permittees. Permittees are encouraged to consider and assign additional duties to the RMC for purposes of increased efficiencies, particularly, but not limited to, reporting duties.
- ii. **Area-wide Stormwater Program.** Permittees may contribute to their countywide or area-wide Stormwater Program, so that the Stormwater Program conducts monitoring on behalf of its members.
- iii. **Third-party Monitoring.** Permittees may use data collected by a third-party organization, such as the Water Board or Department of Pesticide Regulation, to fulfill a monitoring requirement, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.b.

C.8.b. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Program Plan (QAPrP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

C.8.c. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions³² such as:

- Are chemical concentrations in the Estuary potentially at levels of potential concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?

³² https://www.sfei.org/sites/default/files/biblio_files/MYP%202021%20FINAL.pdf (SF Bay Regional Monitoring Program (RMP) Multi-Year Plan, January 2021). While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?
- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

The Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair share financially on an annual basis.

C.8.d. Low Impact Development (LID) Monitoring

LID Monitoring is intended to measure compliance and effectiveness of LID controls. It will improve the understanding of the benefit of LID implementation, in particular, green stormwater infrastructure, on pollutant loading and hydrology of receiving waters within Permittees' jurisdictions, at different space and time scales, and inform the design, construction, operation and maintenance (O&M) and future implementation of LID. LID Monitoring may also be used to calibrate and validate models that estimate pollutant removal effectiveness and inform sizing of LID facilities (e.g., countywide C.3 technical guidance documents, reasonable assurance analysis models, and other sizing and assessment models).

LID Monitoring is intended to answer both of the following two management questions:

- What are the pollutant removal and hydrologic benefits, such as addressing impacts associated with hydromodification, of different types of LID facilities, systems, components, and design variations, at different spatial scales (e.g., single control vs watershed or catchment scale), and how do they change over time?
- What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic performance?

i. LID Monitoring Plans

- (1) The Permittees shall, at the regional or countywide level, develop LID Monitoring Plans to implement the requirements in Provision C.8.d.iii-iv. The LID Monitoring Plans shall, at a minimum:

- (a) Explain how the study(s) will address both management questions and propose monitoring questions necessary that will address both management questions.
 - (b) Describe the LID facility(s) or system(s) and study area(s), including the characteristics, land use and management actions within the tributary drainage area to the LID facility(s) or system(s) that will be monitored.
 - (c) List the monitoring stations, monitoring parameters, and associated measurement, sample and analytical methods that will be utilized.
 - (d) Establish a monitoring schedule, including number and type (wet weather and dry weather) of monitoring events for each site, that may result in a greater number of total and/or annual monitoring events than the minimum required in Table 8.d.2, and including a discussion of the allocation of samples between and within sites.
 - (e) Describe the data evaluation methods, such as statistical analyses to test whether differences in concentrations are statistically significant.
 - (f) Include study-specific Quality Assurance Project Plans (QAPPs), which, at a minimum, are comparable to the SWAMP QAPrP.
 - (g) Provide annual cost estimates for the implementation of the LID Monitoring Plan.
 - (h) Explain how sampling and analytical methodologies will be regionally consistent.
- (2) Permittees shall implement no later than the deadline set forth in Provision C.8.d.v, the approved or conditionally approved LID Monitoring Plans as meeting the requirements herein (including consideration of countywide and regional representativeness and whether the information generated will reliably address the LID Monitoring management questions).

ii. Regional Collaboration

To assist with the development and implementation of scientifically-sound LID Monitoring Plans, to facilitate regional consistency with respect to sampling and analytical methodology, and to make recommendations about allocation of samples between and within different sites, the Permittees shall form and convene a Technical Advisory Group (TAG) which includes impartial science advisors (e.g., SFEI, SCCWRP) and Water Board staff, to review and make recommendations regarding the LID Monitoring Plans (including their study design, analysis methods, results, and conclusions) prior to submission of the LID Monitoring Plans to the Executive Officer. In order to effectuate this review, the Permittees shall submit their draft LID Monitoring Plans to the TAG by March 1, 2023. Prior to the Executive Officer's approval or conditional approval of the LID Monitoring Plans, the TAG shall be convened at least biannually. Thereafter, it shall be convened at least annually to provide continued feedback regarding the implementation of Provision C.8.d, including but not limited to study design, sample locations, and analysis methods.

iii. Methods

The Permittees shall implement or cause to be implemented the LID effectiveness monitoring methods listed in Table 8.d.1.

iv. Parameters and Intensities

- (1) Permittees shall conduct LID Monitoring consistent with the parameters and intensities specified in Table 8.d.2.
- (2) Monitoring must be conducted according to test procedures in 40 CFR part 136 for analyses of pollutants unless another method is required under 40 CFR chapter 1, subchapter N. For PFAS, if there are no standard methods in 40 CFR part 136, Permittees may use other methods, such as those recommended by U.S. EPA for non-potable water and other environmental media.
- (3) In a given water year, if there are not enough storm events for Permittees to sample (i.e., due to weather/climate), Permittees may certify that in their subsequent LID Monitoring Status Report and perform the missed sample events in the subsequent water year.

v. Implementation Level – Permittees shall begin implementation of the approved or conditionally approved LID Monitoring Plans by no later than the start of the 2024 Water Year, which is October 1, 2023.

vi. Reporting – The Permittees shall submit their LID Monitoring Plans for Executive Officer approval by May 1, 2023.

Table 8.d.1 LID Monitoring Methods

	Management Question	Monitoring Methods
1	<p>What are the pollutant removal and hydrologic benefits of LID components, facilities and/or systems (and of different combinations of components, facilities and/or systems), including variations in design and how do they change over time?</p>	<p>Monitoring methods to investigate pollutant removal benefits shall consist of:</p> <ul style="list-style-type: none"> • Required: Collection and analysis of the parameters listed in Table 8.d.2, in stormwater influent and effluent (simultaneously) – using automated samplers to collect flow-weighted composite EMCs (time-weighted composites are allowed if they have many subsamples and can be closely approximated as flow-weighted composites) – at the component, facility, site, and/or watershed scale; and • Optional: sampling of sediment and other technically sound and accepted monitoring methods designed to investigate pollutant removal benefits. <p>Monitoring methods to investigate hydrologic performance (flow) shall consist of:</p> <ul style="list-style-type: none"> • Required: Measurement of stormwater runoff quantity and/or flow at the component, facility, site and/or watershed scale, in both the influent and effluent of the LID BMP(s). • Optional: Measurement of stream flow to evaluate watershed scale benefits; development of runoff hydrographs; water balance monitoring; collection and analysis of infiltration rates or water depth at the facility and/or site scale; or other technically sound and accepted monitoring methods designed to investigate hydrologic performance. <p>Monitoring methods to investigate changes over time include:</p> <ul style="list-style-type: none"> • Longitudinal study(s), using the above monitoring methods applied at the component, facility, and/or system scales, over different time scales.
2	<p>What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic performance?</p>	<ul style="list-style-type: none"> • Monitoring methods assigned to Management Question 1 above, applied at the component, facility, system, and/or site scale; and • Condition assessments at the component, facility, system, and/or site scale.

Table 8.d.2 LID Monitoring Intensities and Parameters

Countywide Stormwater Program	Anticipated Type(s) of LID Facilities Monitored	Total Minimum Number of Water Quality Sample Events During Permit Term (Annual Minimum) ³³	Parameters ^{34,35}
Alameda	High flow rate tree well filters and/or a combination of several LID measures.	25 (3)	<p>Required:</p> <ul style="list-style-type: none"> • Total Hg; • Total PCBs; • TSS • PFAS; • TPH; • Total and Dissolved Copper; • Flow; • Total Hardness; and • pH. <p>Optional:</p> <ul style="list-style-type: none"> • Other emerging contaminants;³⁶ and • Other ancillary parameters.³⁷
Contra Costa	Bioretention and/or other infiltration-based LID measures.	25 (3)	
San Mateo	Regional multi-benefit stormwater capture facility(s).	25 (3)	
Santa Clara	Bioretention and/or other LID measures.	25 (3)	
Solano	Bioretention and/or other LID measures.	12 (1)	

³³ This column indicates the total minimum number of sample events that must take place during the Permit term, and the minimum number of sample events that must take place during each year of the Permit term. Samples shall be collected via automated sampler as flow-weighted composite event mean concentrations (EMCs); time-weighted composites are allowed if they have many subsamples and can be closely approximated as flow-weighted composites. In order to assess performance, each sample event must include simultaneous sampling of the influent and effluent. The Permittees are encouraged to additionally collect sediment samples (e.g., to analyze for total PCBs and total mercury), however such sediment sample collection shall not count towards the required water quality samples specified in this column. The LID Monitoring Plans shall propose how to address both of the Management Questions, by specifying the locations of sampling stations, the matrix (surface water, bedded sediment, etc.), the number of samples to be collected at each site each year in the dry season versus in the wet season, and analytical methods.

³⁴ Each flow-weighted (or time-weighted) composite EMC sample shall be analyzed for all of the required parameters listed in this column. LID Monitoring Plans may include additional parameters not listed in this column.

³⁵ Data must be SWAMP comparable.

³⁶ Other emerging contaminants may include but are not limited to: microplastics and tire compounds such as 6PPD-quinone.

³⁷ Other ancillary parameters may include, but are not limited to: zinc (and other metals), temperature, conductivity, polycyclic aromatic hydrocarbons (PAHs), turbidity, pathogens (FIB), total methylmercury, total organic carbon (TOC), dissolved organic carbon (DOC), pesticides of concern to water quality (e.g., pyrethroids, fipronil and its degradants, and neonicotinoids such as imidacloprid), major cations (Ca, Mg, Na, K), and major anions (SO₄, Cl).

C.8.e. Trash Monitoring

Trash Monitoring is intended to: 1) verify whether Permittees' trash control actions to-date have effectively prevented trash from their jurisdictions from discharging to receiving waters, and 2) evaluate whether discharges of trash from areas of Permittees' jurisdictions where full trash capture equivalency (full trash capture devices or other actions verified with on-land visual trash assessments, as referenced in Provision C.10.b.iii) has been achieved are causing and/or contributing to adverse trash impacts in receiving waters.

Trash monitoring shall address the following management and monitoring questions:

Management Questions

- Have Permittees' trash management actions effectively prevented trash from their jurisdictions from discharging to receiving waters?
- Are discharges of trash from areas within Trash Management Areas controlled to a low trash generation level causing and/or contributing to adverse trash impacts in receiving waters?

Monitoring Questions

- What is the trash condition and approximate level of trash (volume, type, and size) within and discharging into receiving waters in areas that receive MS4 runoff controlled to a low trash generation via the installation of full trash capture devices, or the implementation of other trash management actions equivalent to full trash capture systems?
- Does the level of trash in the receiving water correlate strongly with the conditions of the tributary drainage area of the MS4?

i. Monitoring Components

The Permittees shall implement or cause to be implemented the monitoring components as described below, to address each management and monitoring question. Permittees should use comparable assessment methods to facilitate regional consistency.

To ensure comparable data, for each monitoring site, Permittees and the TAG shall consider incorporating the implementation of steps 1-6 as specified in the Statewide Trash Monitoring Methods Project Trash Monitoring Playbook³⁸ into the Trash Monitoring Plan. Permittees and the TAG shall consider adapting and repeating these six steps for all methods specified in Provision C.8.e.ii, to

³⁸ <https://sites.google.com/sfei.org/trash>

reflect site information that can be collected regardless of method and can increase comparability between methods. The six steps are as follows:

- (1) Event Preparation
- (2) Gather Standard Equipment
- (3) Set up the Assessment Area
- (4) Record the Site Information and Assessment Area Dimensions
- (5) Record Assessment Area Photographs
- (6) Determine, Document, and Map the Locations of Storm Drain Outfalls, Homeless Encampments, and Illegal Dumping Hotspots Which May Impact the Assessment Area.

ii. Monitoring Methods

- (1) Permittees shall collect and analyze the amount of trash discharged from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system.

Sampling of MS4 outfalls includes the use of netting devices attached to the end of the outfall pipe (that capture trash discharging through the MS4), or other equivalent end-of-pipe (or in-line) devices and structures, whether existing, modified, or new. The device used to monitor the trash at the end of the MS4 outfall (or in-line, within the MS4) shall not be used itself as the trash control that grants the Low trash generation status to the tributary drainage area; the monitored tributary drainage area may only be controlled to the Low trash generation level by controls upstream of the monitoring device.

- (2) Permittees shall implement a pilot program to directly (in-stream) sample sections of receiving waters that receive runoff primarily from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system. Permittees should not select in-stream sites that are downstream of direct discharge sites (e.g., homeless encampments and illegal dumping sites).

To the extent feasible, in-stream monitoring sites should be co-located with MS4 outfall monitoring sites, as follows: They should be no further than 300 feet downstream or upstream of them; failing that, they should be no further than 300 feet downstream of them, or, any distance upstream of them; failing that, they should be anywhere within the same receiving

water; failing that, in-stream monitoring sites do not have to be co-located with MS4 outfall monitoring sites.

Sampling a receiving water directly (in-stream) involves the use of trawls, nets, or other equivalent devices, that are designed to capture as much of the width and depth of the receiving water's cross section (especially the thalweg) as is feasible and safe, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system.

Indirect methods (on-land), such as shoreline and/or streambank assessments, are not a satisfactory surrogate or replacement for these direct measurements of trash within receiving waters.

- (3) Permittees may additionally implement shoreline and/or streambank assessment methods (with an appropriate frequency, timing, and assessment length), not to indirectly measure trash loading in MS4 outfalls and receiving waters, but instead to gain a synoptic view of on-land trash conditions adjacent to MS4 outfall and in-stream monitoring sites. Such methods include: the riverine volumetric method, the riverine quantitative tally method, the unoccupied aerial system (UAS) method,³⁹ or other equivalent methods. The riverine qualitative visual assessment method may be merited but requires additional study, refinement, and calibration, and its use is subject to the Executive Officer's approval.
- (4) In order to be able to characterize loading rather than only concentration, Permittees shall directly measure flow at both MS4 outfall sites (flow through the MS4 pipe) and at in-stream receiving water sites (flow through the receiving water). Examples of methods to collect flow data include stream gages, manning's equation, and other methods recommended in Chapter 3.2 of the International Stormwater BMP Database's October 2009 Urban Stormwater BMP Performance Monitoring document.⁴⁰
- (5) All methods shall include collection of data on material type. For example, the volume or tally of cigarette butts collected.

³⁹ <https://sites.google.com/sfei.org/trash>

⁴⁰ <https://bmpdatabase.org/monitoring>

iii. Monitoring Sites, Events, Frequency, and Intervals

- (1) Permittees shall conduct MS4 outfall monitoring annually, starting October 1, 2023, at no less than the number of sites and events specified in the table below, according to the approved or conditionally approved Trash Monitoring Plan.

County	MS4 Outfall Monitoring	
	Minimum Number of Sites	Minimum Number of Wet Weather Monitoring Events
Alameda	3	3
Contra Costa	2	3
Solano	1	3
San Mateo	2	3
Santa Clara	3	3

- (2) Permittees shall implement a pilot program for direct in-stream monitoring. Permittees shall conduct this monitoring annually, starting October 1, 2024, at no less than the number of sites and events specified in the table below, according to the approved or conditionally approved Trash Monitoring Plan.

County	Direct In-Stream Monitoring	
	Minimum Number of Sites	Minimum Number of Wet Weather Monitoring Events
Alameda	2	3
Contra Costa	1	3
Solano	0	0
San Mateo	1	3
Santa Clara	2	3

- (3) Permittees should monitor storm events that trigger trash discharge and transport trash through the MS4 (e.g., 0.25 inches of rain over 24 hours), and that are preceded by at least 48 hours of limited or no trash discharge from the tributary drainage area. Each wet season, Permittees should sample the first forecasted significant storm event, and at least one storm event that is forecast to be greater than the one-year, one-hour storm event (i.e., full capture design standard).
- (4) To the extent possible, Permittees should monitor the same monitoring sites during each year of the Permit term. With cause, justification, and reporting in the Annual Trash Monitoring Progress Report, they can change monitoring sites.
- (5) Tributary drainage areas to monitoring sites should be representative with respect to the types of trash controls present across the region.

For example, some monitoring sites receive runoff from areas controlled primarily by one type of full trash capture device (e.g., an inlet-based device) while other monitoring sites receive runoff from areas controlled primarily by another type of full trash capture device (e.g., a HDS unit). And/or, some monitoring sites receive runoff from areas controlled primarily by full trash capture devices while other monitoring sites receive runoff from areas controlled primarily by Other Actions.

- (6) Permittees are exempt from outfall and receiving water sampling during dangerous and unsafe weather conditions.
- (7) In a given water year, if there are not enough qualifying storm events for Permittees to sample (i.e., due to weather/climate) – or if safety concerns preclude sampling during a qualifying storm event such that Permittees would not achieve the mandatory minimums set forth in Provisions C.8.e.iii.(1)-(2) – the Permittees may certify that in their subsequent Annual Trash Monitoring Progress Report, and perform the missed sample events in the subsequent water year.
- (8) Permittees shall use the results of Trash Monitoring to inform and investigate their trash management actions. If Trash Monitoring results indicate that discharges are causing or contributing to adverse impacts in receiving waters, Permittees shall implement new or enhanced actions to comply with the trash discharge prohibition and receiving water limitations. Examples of results that could trigger follow up actions are provided in the Fact Sheet.

iv. Regional Trash Monitoring Technical Advisory Group

- (1) To assist with the development and implementation of scientifically-sound trash monitoring, the Permittees shall form and convene a Technical Advisory Group (TAG), which includes impartial science advisors (e.g., SFEI) and Water Board staff, to review and provide input on ongoing trash monitoring, site selection, analysis methods, results, and conclusions.

Prior to the submission of the Trash Monitoring Plan, the TAG shall meet at least biannually. Subsequent to the submission of the Trash Monitoring Plan, the TAG shall meet at least annually.

- (2) The Permittees shall solicit input and feedback from the TAG on:
 - (a) The spatial representativeness of each site;
 - (b) The adequacy of the methods employed at each site;
 - (c) The recommended minimum intensity, size, and/or recurrence interval for storms that are sampled;
 - (d) The number of sites and monitoring events, as described in the monitoring schedule in the Trash Monitoring Plan;
 - (e) The timing of sampling during storm events. For example, it is likely that Permittees should prioritize sampling during the rising limb of the hydrograph (and towards the beginning of the rising limb, at that), because that is when most of the trash load is mobilized and discharged to MS4 outfalls and receiving waters;
 - (f) Implementation of Provision C.8.e.iii.(8);
 - (g) Permitting; and
 - (h) Recommendations for alternative approaches to answering the management and monitoring questions.

v. Trash Monitoring Plan - Permittees shall collectively submit a Trash Monitoring Plan by July 31, 2023, subject to Executive Officer approval, that, at a minimum, includes the following information:

- (1) Selected site locations (latitudinal and longitudinal coordinates), including maps and characteristics (e.g., type of outfall, receiving water);
- (2) For each site, describe the land use, trash conditions/levels, trash controls present, and other relevant characteristics (trash generation rates, types of controls present, etc.) of the tributary drainage areas of the MS4, and also delineate the tributary drainage areas of the MS4;

- (3) A description of factors that were considered when selecting monitoring sites and events, including spatial and temporal representativeness;
- (4) For each site, a description of the monitoring methods and protocols that will be used;
- (5) A monitoring schedule, which shall include the timing (of sampling during and between storm events), number and type of monitoring events at each site;
- (6) Plans for implementation of Provision C.8.e.iii.(8);
- (7) A summary of permitting efforts;
- (8) Opportunities provided for input and participation by interested parties and scientific experts other than those participating in the TAG; and
- (9) Input, feedback, and recommendations from the TAG on the capacity of the Trash Monitoring Plan to answer the management and monitoring questions.

C.8.f. Pollutants of Concern Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of select POCs to the Bay from local tributaries and urban runoff, provide information to assess compliance with receiving water limitations, support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.

In particular, monitoring required by this provision must be directed toward addressing the following six priority POC management information needs:

- (1) **Source Identification** - identifying or confirming which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
- (2) **Contributions to Bay Impairment** - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
- (3) **Management Action Effectiveness** - evaluating the effectiveness or impacts of existing management actions, including compliance with TMDLs and other POC requirements and providing support for planning future management actions;

- (4) **Loads and Status** - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges;
- (5) **Trends** - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time; and
- (6) **Compliance with Receiving Water Limitations** – providing information to assess whether receiving water limitations (RWLs) are achieved.

Not all information needs apply to all POCs (see Table 8.2 below for details).

- i. **Sampling Methods** – The Permittees shall implement or cause to be implemented the monitoring components shown in Table 8.1 to address each of the six POC management information needs.

Table 8.1 POC Monitoring Methods

Monitoring Type	Information Need	Monitoring Methods
1	Identify Source Areas	<p>Monitoring methods to identify watershed sources of POCs shall include:</p> <ul style="list-style-type: none"> • Collection and analysis of POCs (in dissolved phase or on suspended sediment particles as appropriate for pollutant) in urban stormwater runoff transported through MS4s or receiving waters during stormwater runoff events; or • Collection and analysis of POCs (in dissolved phase or on suspended sediment particles as appropriate for pollutant) in urban stormwater runoff at outfall locations (i.e., as runoff from MS4 enters receiving waters) during stormwater runoff events; or • Collection and analysis of POCs on bedded sediments deposited in MS4s, treatment facilities, or receiving waters; or • Collection and analysis of POCs in stormwater runoff or bedded sediments on source area properties (e.g. private property) or public rights of way; or • Other monitoring methods designed to identify specific sources or uses of POCs (e.g., caulk in roadways or building materials) or watershed source areas.
2	Identify watershed areas contributing most to Bay impairment	<p>Monitoring methods to identify watershed areas contributing most to Bay impairment shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1; or • Collection and chemical analysis of small fish tissue (or other relevant indicator) near tributary confluences with the Bay; or • Collection of bedded sediments near tributary confluences with the Bay and analysis for POCs.
3	Effectiveness of, and provide support for future, management actions	<p>Monitoring methods to evaluate effectiveness of, and provide support for future, management actions shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, but focused on characterizing the effectiveness of specific management actions in reducing or avoiding POCs in MS4 discharges; or • Collection of information to characterize or develop models of control measure performance

Monitoring Type	Information Need	Monitoring Methods
		(e.g., treatment controls, demolition debris program, green infrastructure, etc.). This information could include data for model calibration and validation, or other information needed to estimate or compute model parameters.
4	Provide information on POC loads, concentrations, or presence/absence	<p>Monitoring methods to provide information on POC loads, concentrations, or presence/absence shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, in combination with quantitative modeling associated with quantifying POC loads from MS4s or small tributaries to the Bay; or • Collection of information to support development of conceptual models of watershed fate and transport; or • Collection of information to support watershed loading models such as data for model calibration and validation or other information needed to estimate or compute model parameters.
5	Evaluate POC trends	Monitoring methods to provide information on trends in POC loads and concentrations over time shall include methods described for Monitoring Type #1 or #2
6	RWLs Assessment	<p>Monitoring in receiving waters to assess compliance with RWLs. Monitoring methods shall include:</p> <ul style="list-style-type: none"> • Collection and analysis of analytes during the wet season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by urban stormwater runoff. • Collection and analysis of analytes during the dry season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by dry season urban runoff. • Sampling locations for RWLs assessment monitoring shall be spatially and temporally representative of the sampled waterbody. Sampled waterbodies shall be representative of the range of receiving waterbody types.

- ii. **Parameters and Monitoring Frequency** – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in Table 8.2. Monitoring frequencies are described as the total and minimum number of samples that Permittees within a countywide Stormwater Program shall collectively collect and analyze in a Water Year (October 1- September 30). Minimum number of samples that Permittees within a countywide Stormwater Program shall collect by the end of the Permit term to address each monitoring type are also specified.

Table 8.2 POC Monitoring Parameters, Effort and Type

Pollutant of Concern	Total Samples^a Collected /Analyzed (yearly minimum) for each Countywide Program: Alameda, Contra Costa, Santa Clara, and San Mateo	Minimum Number of Samples for each Monitoring Type^b
Polychlorinated Biphenyls (PCBs)	75 (8) Alameda, Santa Clara 65 (8) Contra Costa, San Mateo	8 samples minimum for monitoring types 1-3 and 16 samples minimum for monitoring types 4-5
Total Mercury	60 (8) Alameda, Santa Clara 50 (8) Contra Costa, San Mateo	8 samples minimum for monitoring types 1-5
Copper	5	all samples for monitoring type 4
Emerging Contaminants^c Must include but not limited to: <ul style="list-style-type: none"> • contaminants likely in stormwater and associated with vehicles; • per- and polyfluoroalkyl substances (PFAS); • organophosphate ester plastic additives/flame retardants; • bisphenol plastic additives; and • ethoxylated surfactants 	25 See footnote c	all samples for monitoring type 4 See footnote c
Ancillary Parameters^d: <ul style="list-style-type: none"> • Total organic carbon • Suspended sediments (SSC) • Hardness 	as necessary to address management questions for other POCs – see footnote d	
RWLs Assessment: copper, zinc, fecal indicator bacteria, and additional analytes determined under Provision C.8.h.iv	4 wet season samples 1 dry season sample	5 samples for monitoring type 6

^a This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.1), that must be collected during the Permit term. The number in parentheses indicates the minimum number of samples that must be collected, across all applicable monitoring types, during each of the five years of the permit. For example, 75 total samples must be collected for total PCBs and 60 total samples for mercury by each set of Santa Clara County and Alameda County during the term of the permit. San Mateo and Contra Costa Counties, because of smaller program size, must collect 65 PCBs and 50 total samples for mercury. Permittees must collect a minimum of 8 PCBs and 8 mercury samples every year of the Permit term, including the final year. It is possible that data can satisfy multiple monitoring types. However, the intent of the Permit is to achieve a distribution of monitoring effort across all applicable monitoring information needs. Therefore, no more than 25 percent of samples for any pollutant may be used to satisfy requirements for multiple monitoring categories for that pollutant. This requirement is intended to ensure that monitoring is focused to provide the best information to answer specific management questions.

^b This column indicates the monitoring types from Table 8.1 that are applicable to this POC along with the minimum number of samples that shall be collected by each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) by the end of the Permit term. The applicable monitoring type(s) is also stated to illustrate the management information need(s) motivating the collected data. For example, each set of Permittees (i.e., the Countywide Programs for Santa Clara, San Mateo, Alameda, and Contra Costa counties) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.1 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

^c Permittees, collectively, shall produce or cause to be produced a stormwater monitoring strategy for emerging contaminants (ECs) April 1, 2023 that prioritizes ECs for stormwater monitoring listed in this table and possibly others and establishes an approach for sampling stormwater ECs based on specific or likely physico-chemical properties, sources, transport pathways, and fate of prioritized ECs. Permittees must conduct or cause to be conducted ECs stormwater monitoring to execute the ECs stormwater monitoring strategy at a level of effort indicated in the table. This level of effort can be satisfied either through sampling and analysis of the number of samples indicated in this table or through augmentation of the San Francisco Bay Regional Monitoring Program Emerging Contaminants Monitoring Strategy in the amount of \$100,000 per year for all Permittees combined.

^d Total Organic Carbon (TOC) data are not used independently. Rather, TOC can be useful for normalizing PCBs data collected in water and sediment. TOC shall be collected concurrently with PCBs data that should be normalized to TOC. Similarly, suspended sediment concentrations (SSC) samples should be collected and analyzed when water samples are collected that will be used to assess loads, loading trends, or BMP effectiveness for PCBs and Mercury. Hardness data are used in conjunction with copper concentrations collected in fresh water.

- iii. **POC Parameters and Analytical Methods** – Samples collected consistent with Table 8.2 shall be analyzed for parameters listed in Table 8.3. Where no laboratory method is listed in Table 8.3, Permittees shall use U.S. EPA or SWAMP-approved methods. There are no analytical methods listed in Table 8.3 for ECs as there are not U.S. EPA-approved methods for most of these contaminants. Monitoring for ECs is investigatory monitoring to provide information on EC loads, concentrations, and presence/absence rather than compliance determination. Accordingly, specification of analytical method is not mandatory. Moreover, the sampling and analysis is likely to be conducted through the San Francisco Bay Regional Monitoring Program, which has a robust and well-established quality assurance process, and the laboratories chosen for the EC analyses will be applying state-of-the-science analytical methods for the detection and quantification of ECs in stormwater samples.

Table 8.3 POC Analytes and Analytical Methods

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs	U.S. EPA 1668 (RMP 40)
		Total Organic Carbon	SM5310B
		Suspended sediments (SSC)	ASTM D3977-97
	Bedded Sediment	Total PCBs	As appropriate to address the management information need: U.S. EPA 1668 (RMP 40), 8082A, or 8270D modified by Method 1625
Total organic carbon		U.S. EPA 9060	
Mercury	Water	Total Mercury	U.S. EPA 1631 Rev E
	Bedded Sediment	Total Mercury	U.S. EPA 7473
Copper	Water	Total Copper	U.S. EPA 200.7
		Dissolved Copper	U.S. EPA 200.8
		Hardness	U.S. EPA 130.1 or 130.2

C.8.g. Pesticides and Toxicity Monitoring

Permittees shall conduct wet and dry weather monitoring of pesticides and toxicity in urban creeks. If a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the Permit term, Permittees may request the Water Board modify, reduce or eliminate this monitoring requirement, provided the resultant change would result in overall improvement of pesticide monitoring data collection.

In fulfilling the requirements of Provision C.8.g, Permittees may collaborate with the California Department of Pesticide Regulation (CDPR) for data collection and analysis. For data collected through such collaboration, CDPR’s standard operating procedures and quality assurance/quality control methods

may be used in place of the SWAMP comparability requirements in subprovisions C.8.b and in C.8.g.

i. Toxicity in Water Column - Dry Weather

- (1) Field and Laboratory Method – Permittees shall collect grab samples of receiving water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed, and by the methods described, in Table 8.4.

Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.⁴¹ Each sample shall be subject to determination of “Pass” or “Fail” and shall indicate “Percent Effect” from toxicity using nondiluted samples. The TST null hypothesis shall be “mean sample response $\leq 0.75 \times$ mean control response.” A test result that rejects this null hypothesis shall be reported as “Pass.” A test result that does not reject this null hypothesis shall be reported as “Fail.” The relative “Percent Effect” of the sample is defined and reported as: $((\text{Mean control response} - \text{Mean sample response}) \div \text{Mean control response}) \times 100$.

- (2) Sample Design/Locations – Sample locations may be selected by Permittees to monitor locations where toxicity could be likely; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.
- (3) Frequency, Timeframe and Number of Sites – Permittees shall annually collect in the dry season at least the minimum number of samples as shown below.

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

⁴¹ National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.

Table 8.4 Water Column Aquatic Toxicity Analytical Procedures

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
Pimephales promelas (Fathead Minnow)	Larval Survival and Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 ⁴² EPA 833-R-10-003 ⁴³
Ceriodaphnia dubia (Freshwater Crustacean)	Survival ^a	Pass or Fail, % Effect <25% Passes, >25% Fails	EPA-821-R-02-013 EPA 833-R-10-003
Ceriodaphnia dubia (Freshwater Crustacean)	Reproduction	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Selenastrum capricornutum (Green Algae)	Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Hyalella azteca (Freshwater Amphipod)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 ⁴⁴ EPA 833-R-10-003
Chironomus dilutus (midge)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 EPA 833-R-10-003

^a The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t-test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."

^b For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.

⁴² Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.

⁴³ National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003) 2010.

⁴⁴ *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H.azteca* and *C.dilutus* methods.

ii. Toxicity, Pesticides and Other Pollutants in Sediment - Dry Weather

- (1) Field and Laboratory Method – The Permittees shall collect grab samples of creek sediment using applicable SWAMP-comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.5. Where no laboratory method is listed in Table 8.5, Permittees shall use U.S. EPA- or SWAMP-approved methods.
- (2) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, or to resample a location where toxicity has been found in the past, for example.

Table 8.5 Sediment Toxicity & Pollutants Analytical Procedures

Test Species or Pollutant	Units	Laboratory Method
<i>Hyalella azteca</i> and <i>Chironomus dilutus</i> survival ^a	Pass/Fail using TST, % Effect ^a	EPA-600/R-99-064 ⁴⁵
Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin		EPA 3540C followed by EPA 8270D by NCI-GCMS
Fipronil and its degradates (fipronil-sulfone, fipronil-desulfinyl, fipronil sulfide)		
Total PAHs		
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc		
Total organic carbon		
Grain size		

^a For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

⁴⁵ *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA 600/R-99-064) Second Edition. March 2000.

- (3) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.
- (4) Frequency, Timeframe, and Number of Sites – Permittees shall collect at least the minimum number of samples annually as shown:

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

iii. Wet Weather Pesticides and Toxicity Monitoring

- (1) Field and Laboratory Method – Permittees shall collect water column samples and analyze them for the following parameters using the methods specified in Tables 8.4 and 8.5. For imidacloprid, Permittees shall specify an analytical method that achieves a reporting level of 0.01 ppb.
 - Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
 - Imidacloprid
 - Fipronil and its degradates fipronil-sulfone, fipronil-desulfinyl, fipronil sulfide and fipronil amide (amide is optional – do it if lab offers the suite)
 - Toxicity
- (2) Sample Design/Locations – Permittees shall collect samples annually during storm events. Sample locations shall be representative of urban watersheds (i.e., bottom of watershed locations).
- (3) Frequency, Timeframe, and Number of Sites – If this (Provision C.8.g.iii) sampling is conducted by the RMC on behalf of all Permittees, a total of ten (10) samples shall be collected over the Permit term, with a minimum

of six (6) samples collected by the end of the third water year of the permit term. If this (Provision C.8.g.iii) sampling is conducted by Countywide Stormwater Programs, Permittees shall collect at least the minimum number of samples as shown below:

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

iv. Follow-up – Permittees shall provide notification in the next Urban Creeks Monitoring Report when analytical results indicate any of the following:

- (1) A toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, follow-up sampling, and both have $\geq 50\%$ Percent Effect;
- (2) A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan; or
- (3) For pollutants without water quality objectives, results exceed Probable Effects Concentrations or Threshold Effects Concentrations.⁴⁶

C.8.h. Reporting

i. Water Quality Standard Exceedance – When data collected pursuant to Provisions C.8.a.-C.8.g. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a follow-up report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are addressed pursuant to

⁴⁶ TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31. More recent TECs and PECs may be used if lower than stated in MacDonald 2000.

Provisions C.9 through C.12, C.14, C.18, and C.19, consistent with Provision C.1.

- ii. **Electronic Reporting** – The Permittees shall submit to the California Environmental Data Exchange Network (CEDEN) all results from monitoring conducted pursuant to Provisions C.8.d LID Monitoring, C.8.e Trash Monitoring, C.8.f Pollutants of Concern Monitoring, and C.8.g Pesticides and Toxicity Monitoring. Data that CEDEN cannot accept are exempt from this requirement.
 - (1) Data shall be submitted in SWAMP formats and with the quality controls required by CEDEN.
 - (2) Data collected during the previous October 1–September 30 period shall be submitted by March 31 of each year.
- iii. **Urban Creeks Monitoring Report** – The Permittees shall submit a comprehensive Urban Creeks Monitoring Report at the countywide level no later than March 31 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Each Urban Creeks Monitoring Report shall contain summaries of C.8.d LID Monitoring, C.8.e Trash Monitoring, C.8.f Pollutants of Concern Monitoring, and C.8.g Pesticides and Toxicity Monitoring, including the following:
 - (1) **A LID Monitoring Status Report**, which, at a minimum, includes the following information:
 - (a) A summary of the LID Monitoring Methods and study designs used in the preceding water year, at each sampled LID component, facility or system.
 - (b) A summary table that lists monitoring samples collected during the preceding water year during the Permit term, including at a minimum, the following information for each sample location: Site ID; the name or ID of the LID component, facility or system name; latitude and longitude of the LID component, facility or system; type of LID component, facility or system (e.g., bioretention); characteristics and land use of the tributary drainage area of the LID component, facility or system; other management actions and controls present in the tributary drainage area of the LID component, facility or system; sample dates; and concentrations of parameters measured.
 - (c) A summary of lessons learned, progress made, and interim conclusions, for all samples collected during the previous water year.
 - (d) For all data generated during the preceding water year, a statement of data quality.

- (e) The raw data generated by the preceding water year, made available to the Water Board and third parties.
 - (f) An outline of steps (including but not limited to study designs, methods and sites) for the upcoming water year.
 - (g) An analysis of the data, including the following:
 - (i) Identification and analysis of any trends in stormwater or receiving water quality.
 - (ii) A discussion of the data for each monitoring program component, which includes:
 - a. Monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, the California Toxics Rule, and other applicable water quality control plans;
 - b. Where appropriate, hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - c. Identification and prioritization of water quality problems;
 - d. Identification of potential sources of water quality problems;
 - e. Description of follow-up actions;
 - f. Evaluation of the effectiveness of existing control measures; and
 - g. Identification of management actions needed to address water quality problems.
- (2) **An Annual Trash Monitoring Progress Report**,⁴⁷ which, at a minimum, includes the following information:
- (a) Narrative description of monitoring conducted, including the number of sites monitored and the number of monitoring events completed;
 - (b) Description of storms events that were sampled, including the date(s) and times when samples were collected, intensity and duration of the storm event, a description of where along the hydrograph the storm event was sampled, and justification used to determine the storm event was of appropriate size to displace and/or mobilize the transport of trash through the MS4 system;

⁴⁷ The Annual Trash Monitoring Progress Report shall be a single collective regionwide report. With their UCMRs, all Permittees shall include a copy of the Annual Trash Monitoring Progress Report.

- (c) Narrative description, including maps, of any MS4 outfalls, homeless encampments and illegal dumping sites, located upstream of each Outfall Monitoring sample site;
 - (d) Description and the results of data analysis methods, including statistical analyses;
 - (e) Results and lessons learned;
 - (f) Data quality assurance procedures that were implemented for samples collected;
 - (g) Monitoring events (including locations and methods) planned for the subsequent fiscal year(s);
 - (h) A comprehensive detailed discussion of implementation of Provision C.8.e.iii.(8); and
 - (i) Updates of required Trash Monitoring Plan elements.
- (3) **A Pesticides and Toxicity Monitoring Status Report**, which includes the following information:
- (a) A complete Water Year Summary Table that lists the monitoring sites, with a row for each site. The table columns contain: Site ID; creek name; latitude; longitude; permittee jurisdiction(s); water column toxicity (acute); water column toxicity (chronic); sediment toxicity (acute); sediment toxicity (chronic); and sediment chemistry. For each site, list the site information and check the parameters sampled at that site. Provide a statement of the data quality and an analysis of the data, including:
 - (i) Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, Ocean Plan, and California Toxics Rule and other applicable water quality control plans;
 - (ii) Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - (iii) Identify and prioritize water quality impairments;
 - (iv) Identify and potential sources (and actual, if known) of water quality impairments, and provide sufficient justification for those potential sources;
 - (v) Describe follow-up actions;
 - (vi) evaluate the effectiveness of existing management actions; and

- (vii) identify additional management actions needed to address water quality impairments.

iv. Pollutants of Concern Monitoring Reports

- (1) In each Urban Creeks Monitoring Report, the Permittees shall submit a report describing the allocation of sampling effort for POC monitoring for the forthcoming year (i.e., the water year that began October 1 of that year) and what was accomplished for POC monitoring during the preceding water year. The report shall include (for preceding year and projected for forthcoming year): monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured. Any data not reportable to CEDEN should also be included in the Urban Creeks Monitoring Report due annually on March 31.
- (2) Receiving Water Limitations Assessment Report
 - (a) By no later than March 31, 2023, Permittees shall submit a report with the following information:
 - (i) Relevant water quality objectives against which to compare monitoring data;
 - (ii) Analytes in addition to those listed in Table 8.2 to monitor based on assessment of the potential that discharges of these analytes may result in levels in receiving waters approaching or exceeding water quality objectives and the basis of the determination; and
 - (iii) Identification of waterbodies to be sampled, sampling locations within those waterbodies, and sampling schedule consistent with the requirements in Tables 8.1 and 8.2.
 - (b) The report shall be subject to approval by the Executive Officer for compliance and technical adequacy. Upon approval by the Executive Officer, Permittees shall augment the RWLs assessment monitoring required in Tables 8.1 with the analytes identified in the report.
 - (c) By no later than March 31, 2026, or as part of the Integrated Monitoring Report, Permittees shall submit an updated Receiving Water Limitations Assessment Report with proposed monitoring to be conducted during the next permit term.

- v. Integrated Monitoring Report** – By no later than March 31, 2026, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Urban Creeks Monitoring Report. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit. The Integrated Monitoring Report

shall report on all the data collected since the previous Integrated Monitoring Report⁴⁸ and shall contain the following:

- (1) The information described in Provisions C.8.h.iii.(1)-(3), pertaining to the monitoring data collected during the preceding (third) water year of the Permit term;
- (2) A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report,⁴⁸ and may include other pertinent studies.

For LID Monitoring and Trash Monitoring, this shall additionally include a summary of the methods and study designs used in all preceding water years, at each sample location. And, a summary of lessons learned, progress made, data, results, analyses, and conclusions, for all samples collected during all prior water years during the Permit term;

- (3) For POCs, methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable;
- (4) A budget summary for each monitoring requirement (for each year of the Permit term); and
- (5) With cause and justification, recommendations for changes to any of the elements of Provision C.8 in future Permit terms.

vi. Comprehensive Bioassessment Final Report – By no later than March 31, 2024, the Permittees shall collectively submit a comprehensive analysis of all bioassessment monitoring conducted by the RMC during MRP 1 and MRP 2, for Water Years 2012-2021.

vii. Standard Report Content – All monitoring reports shall be clear, concise, and well-organized, and shall include the following information:

- (1) An Executive Summary;
- (2) The purpose of the monitoring and brief description of the study design rationale;
- (3) Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data;
- (4) Brief descriptions of sampling protocols and analytical methods;
- (5) Sample location description, including water body name and segment and latitude and longitude coordinates;

⁴⁸ Excluding Creek Status Monitoring conducted subsequent to the submittal of the Integrated Monitoring Report during the Previous Permit.

- (6) Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue);
- (7) Concentrations detected, measurement units, and detection limits;
- (8) Assessment, analysis, and interpretation of the data for each monitoring program component;
- (9) A listing of volunteer and other non-Permittee entities whose data are included in the report; and
- (10) Assessment of compliance with applicable water quality standards.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses, within their jurisdictions, their own and others' use of pesticides that pose a threat to water quality and that have the potential to enter the municipal conveyance system.

This provision implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide-related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. U.S. EPA phased out urban uses of diazinon in the mid-2000s, and diazinon is no longer detected in urban creeks in the region. Pesticide-related toxicity continues to occur because State and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. In adopting the TMDL implementation plan, the Water Board recognized that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and State law; and (2) because a realistic date for achieving allocations cannot be discerned given the current framework for pesticide regulation, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Urban-use pesticides of concern (Pesticides of Concern) to water quality include: diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); carbamates (e.g., carbaryl and aldicarb); and neonicotinoids (e.g., imidacloprid, acetamiprid, and dinotefuran).

C.9.a. Maintain and Implement an Integrated Pest Management Policy or Ordinance and Standard Operating Procedures

All Permittees have developed a pesticide toxicity control program for use of pesticides in municipal operations and on municipal property based on the concepts of Integrated Pest Management (IPM)⁴⁹ and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

⁴⁹ The Glossary attached to this Permit includes IPM definitions adapted from the draft UP Provisions.

- i. **Task Description** – The Permittees shall implement their IPM policies or ordinances and standard operating procedures and update their IPM policies or ordinances and standard operating procedures as needed to ensure their use of pesticides does not cause or contribute to pesticide-related toxicity in receiving waters.
- ii. **Implementation** – Each Permittee shall require municipal employees and contractors to adhere to its IPM policy or ordinance and standard operating procedures in all the Permittee’s municipal operations and on all municipal property.
- iii. **Reporting**
 - (1) In each Annual Report, Permittees shall certify they are implementing their IPM policy or ordinance and standard operating procedures, report trends in quantities and types of pesticide active ingredients used, and explain any increases in use of Pesticides of Concern to water quality.
 - (2) In each Annual Report, Permittees shall provide a brief description (e.g., one or two sentences) of two IPM tactics or strategies implemented in the reporting year. Examples could include non-chemical strategies such as monitoring, mowing weeds, mulching, and redesign of problematic landscapes; preventive actions such as sealing holes and gaps in structures, improving sanitation, and outreach to employees about how their actions contribute to pest presence; and integration of several strategies, such as tackling a rat problem by educating building occupants, improving sanitation, trimming trees away from buildings, sealing holes in the structure, and trapping rodents. To the extent possible, different IPM actions should be described each year, so that a range of IPM actions is described over the permit term.
 - (3) In their 2023 Annual Reports, the Permittees shall provide links to their IPM policies or ordinances and IPM standard operating procedures. Permittees shall submit updated links in subsequent Annual Reports, if those links change.

C.9.b. Train Municipal Employees

- i. **Task Description** – The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee’s IPM policy and/or ordinance and standard operating procedures. This training may also include other training opportunities, such as the ReScape California Landscape Maintenance Training & Qualification Program, provided both structural and landscape pest control training are provided.

ii. Reporting

- (1) In each Annual Report, Permittees shall report the percentage of municipal employees who apply pesticides who have received training in the Permittees' IPM policy and/or ordinance and IPM standard operating procedures within the last year. This report shall briefly describe the nature of the training, such as tailgate training provided by a Permittee's IPM coordinator, IPM training through the Pesticide Applicators Professional Association, etc.
- (2) The Permittees shall submit training materials (e.g., course outline, date, and list of attendees) upon request.

C.9.c. Require Contractors to Implement IPM

- i. Task Description** – The Permittees shall include contract specifications requiring contractors to implement IPM, so that all contractors practice IPM on municipal properties. The Permittees shall monitor contractor pesticide applications to ensure that contractors implement their contract specifications in accordance with the Permittee's IPM policies and/or ordinances and standard operating procedures. Contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation. Similarly, IPM certifications awarded to a pest control company may not guarantee that an individual employee will always use IPM strategies. Thus, periodic Permittee observation and verification of contractor performance is necessary.
- ii. Implementation** – Permittees shall periodically monitor their contractors' activities to verify full implementation of IPM techniques. This shall include, at a minimum, evaluation of lists of pesticides and amounts of active ingredient used.
- iii. Reporting** – In each Annual Report, Permittees shall describe how they verified contractor compliance with IPM policies and any actions taken or needed to correct contractor performance.

C.9.d. Interface with County Agricultural Commissioners

- i. Task Description** – The Permittees shall maintain communications with county agricultural commissioners to (a) get input and assistance on urban pest management practices and use of pesticides, (b) inform them of water quality issues related to pesticides, and (c) report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire (<https://www.cdpr.ca.gov/docs/legbills/calcode/040501.htm#a6970>).

- ii. **Reporting** – In each Annual Report, Permittees shall briefly describe the communications they have had with county agricultural commissioners and report follow-up actions to correct violations of pesticide regulations.

C.9.e. Public Outreach

- i. **Task Description** – Permittees shall undertake outreach programs to (a) encourage communities within the Permittee’s jurisdiction to reduce reliance on pesticides that threaten water quality; (b) encourage public and private landscape irrigation management that minimizes pesticide runoff; and (c) promote appropriate disposal of unused pesticides.

- ii. **Implementation** – The Permittees shall conduct each of the following:

- (1) **Point of Purchase Outreach:** The Permittees shall:

- Conduct outreach to consumers at the point of purchase;
- Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
- Participate in and provide resources for the “Our Water, Our World” program or a functionally equivalent pesticide use reduction outreach program.

- (2) **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).

- (3) **Outreach to Pest Control Professionals:** The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by EcoWise Certified or a functionally equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BAMSC; CASQA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.

- iii. **Reporting** – In each Annual Report, Permittees shall describe their actions taken in the three outreach categories above. Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that

respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted in each of the three categories, including level of effort, messages and target audience.

C.9.f. Track and Participate in Relevant Regulatory Processes

- i. **Task Description** – The Permittees shall conduct the following activities, which may be done at a county, regional, or statewide level:
- (1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
 - (2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
 - (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with WQS; and
 - (4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.
- ii. **Reporting** – In each Annual Report, Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or statewide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged.

C.9.g. Evaluate Implementation of Pesticide Source Control Actions

- i. **Task Description** – This task is necessary to gauge how effective the implementation actions taken by Permittees are in (a) achieving TMDL targets and (b) avoiding future pesticide-related toxicity in urban creeks. Once during the permit term, Permittees shall conduct a thoughtful evaluation of their IPM efforts, how effective these efforts appear to be, and how they could be improved.
- ii. **Implementation** – The Permittees shall evaluate the effectiveness of the pesticide control measures implemented by their staff and contractors,

evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies), and identify additions and/or improvements to existing control measures needed to attain targets, with an implementation time schedule.

- iii. Reporting** – In their 2025 Annual Reports, the Permittees shall submit this evaluation, which shall include an assessment of the effectiveness of their IPM efforts required in Provisions C.9.a-f (including the effectiveness of outreach efforts required by Provision C.9.e); a discussion of any improvements made in these efforts in the preceding five years; and any changes in water quality regarding pesticide toxicity in urban creeks. This evaluation shall also include a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term. Work conducted at the county or regional level shall be evaluated at that respective level; reiteration in individual Permittee evaluation reports is discouraged.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.1, for trash discharges, Discharge Prohibition A.2, and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems in accordance with the requirements of this provision. Flood management agencies are not subject to these trash reduction requirements except for those included in Provision C.10.c.

C.10.a. Trash Reduction Requirements

Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by June 30, 2025.

- i. **Schedule** - Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

- (1) 90 percent by June 30, 2023; and
- (2) 100 percent by June 30, 2025.

Permittees that do not attain the 90 percent compliance benchmark by June 30, 2023, shall submit a revised trash load reduction plan as described in Provision C.10.d and a schedule of implementation of additional trash load reduction control actions sufficient to achieve compliance with the 90 percent compliance benchmark within a reasonable timeframe, and the 100 percent compliance benchmark by June 30, 2025.

- ii. **Trash Generation Area Management** - Permittees shall demonstrate attainment of the Provision C.10.a.i trash discharges percentage-reduction requirements by management of mapped trash generation areas within their jurisdictions delineated on Trash Generation Area Maps included with their Long-Term Trash Reduction Plans, submitted in February 2014, in accordance with the requirements and accounting set forth in this provision. The February 2014 maps provide the 2009 trash levels and delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories:

- Low = less than 5 gal/acre/yr;
- Moderate = 5-10 gal/acre/yr;
- High = 10-50 gal/acre/yr; and
- Very High = greater than 50 gal/acre/yr.

Permittees also designated trash management areas on their February 2014 maps encompassing one or more trash generation areas, within which they will implement trash control actions. With the 2024 Annual Report, Permittees shall submit a revised Trash Generation Area Map that includes trash management areas, as well as private land drainage areas (See Provision C.10.a.ii.b) that will be retrofitted with full trash capture devices, or equivalent, by June 30, 2025. The updated trash generation map(s) shall include GIS layers and appropriate metadata (including tables etc.) that identify locations and associated drainage areas of full trash capture systems, and other trash control actions, and shall highlight any revisions or changes from the previous map(s). Permittees may provide access to multilayered GIS maps that account for other trash control action details and locations rather than submitting that information in a document. Maps and data generated through this effort may be used to illustrate progress toward achieving the trash reduction requirements in Provision C.10.a.i.

- (a) Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better.

A full capture device or system is a treatment control, or series of treatment controls, including, but not limited to, a multi-benefit project (as defined in the Trash Amendments) or a low-impact development control that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q , resulting from a one-year, one-hour storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain. The device(s) must also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events. Types of systems certified by the State Water Resources Control Board are deemed full capture systems. A stormwater treatment facility implemented in accordance with Provision C.3 is also deemed a full capture system if the facility, including its maintenance, prevents the discharge of trash to the downstream MS4 and receiving waters and discharge points from the facility, including overflows, are appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one-year, one-hour storm hydraulic specification.

Actions equivalent to full trash capture are actions that send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows. The Provision C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation by the Provision C.10.a.i mandatory deadlines.

- (b) By July 1, 2025, Permittees shall ensure that private lands that are moderate, high, or very high trash generating, and that drain to storm drain inlets that Permittees do not own or operate (private), but that are plumbed to Permittees' storm drain systems are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of actions equivalent to or better than full trash capture systems shall be assessed with visual assessments in accordance with Provision C.10.b.iii. If there is a full trash capture device downstream of these private lands that is designed, operated, and maintained to control trash discharges from that land area, no other trash control is required.

C.10.b. Demonstration of Trash Reduction Outcomes

- i. **Full Trash Capture Systems** – Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each full trash capture system, including the mapped location and drainage area served by each system. Permittees shall provide their respective vector control agencies with the names and locations of new and existing full trash capture devices.
 - (a) **Inspection and Maintenance** – Permittees shall inspect and maintain full trash capture devices to ensure that they are operating appropriately and have sufficient operating capacity to capture trash consistent with the requirements of this Provision. The inspection and maintenance of each full capture device shall be at a frequency sufficient to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash. At a minimum, all full trash capture devices shall be inspected and maintained once per year. In High and Very High trash generation areas, all full trash capture devices shall be inspected at least twice per year (and maintained as necessary), with the inspections spaced at least three months or more apart.

- (b) For catch basin insert type full capture systems, if any such device is found to have a plugged or blinded screen, or is 50 percent full or greater, during an inspection or a maintenance event, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor 50 percent or more full of trash at the next inspection or maintenance event. For high-flow capacity devices, if any such device is found to have a plugged or blinded screen, or exhibits a condition that exceeds the manufacturer's guidelines for requiring maintenance, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor exceeds the manufacturer's guidelines during the next inspection or maintenance event.
- ii. **Maintenance Records** – Permittees shall retain device-specific maintenance records, including, at a minimum: device type, date of installation, location, drainage area, date(s) of inspection and maintenance, the capacity condition of the device at the time of inspection and maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, any damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report and may be limited to the number of full capture devices maintained that exhibited a plugged, 50 percent or more full, or overflowing condition upon inspection or maintenance.
- (a) **Certification** – Permittees shall certify annually that each full trash capture system is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation rate area.
- iii. **Other Trash Management Actions** – Permittees shall maintain, and provide for inspection and review upon request, documentation of non-full trash capture system trash control actions that verifies implementation of each action. Permittees shall also conduct assessment of the action that verifies effectiveness of the action or combination of actions and maintain, and provide for inspection and review upon request, documentation of assessments.
- (a) **Implementation Documentation** – Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other

information relevant to effective implementation of the action or combination of actions.

- (b) **Visual Assessment of Outcomes of Other Trash Management Actions** – Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see Provision C.10.b.iii.(b)(iv)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:
- (i) Conduct observations of the sidewalk, curb and gutter within each trash management area, or locations associated with sources of trash.
 - (ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles or at strategic locations, provided they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.
 - (iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.
 - (iv) Permittees may put forth substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Permittees shall submit such evidence to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these management actions at the specified performance standard.

- iv. **Percentage Discharge Reduction** – Percentage discharge reduction from 2009 from Very High generation areas reduced to High, Moderate, and Low, High generation areas reduced to Moderate and Low, and Moderate trash generation areas reduced to Low trash generation category to meet the required total percent reduction (% Reduction) shall be calculated based on the following formula:

$$\% \text{ Reduction} = 100 [(12A_{VH(2009)} + 4A_{H(2009)} + A_{M(2009)}) - (12A_{vh} + 4A_h + A_M)] / (12A_{VH2009} + 4A_{H2009} + A_{M2009})$$

where:

$A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area

A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year

A_H = total amount of high trash generation category v jurisdictional area in the reporting year

A_M = total amount of moderate trash generation category jurisdictional area in the reporting year

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

100 = fraction to percentage conversion factor

- v. **Source Control** – Permittee jurisdiction-wide actions to reduce trash at the source, particularly persistent trash items other than those addressed under previous Permits (foam foodware and single-use plastic bags) may be valued toward trash load reduction compliance by up to ten percent load reduction total for all such actions. To claim a load percentage reduction value, Permittees must provide substantive and credible evidence that new source control actions are being implemented jurisdiction-wide and reduce trash by the claimed value. A Permittee may support its claimed source reduction value with reference studies from other jurisdictions provided that it also provide credible evidence that the chosen source control action would achieve comparable trash reduction if implemented in the Permittee's jurisdiction.

A jurisdiction-wide source control load reduction value cannot be claimed after June 30, 2025. However, Permittees may demonstrate and claim full trash capture equivalence of a source control in specific trash generation areas or in combination with other controls in an area if the control or combination of controls are documented, assessed, and verified in accordance with Provision C.10.b.iii.

vi. Partial Trash Reduction – Curb Inlet Screens – Studies conducted by the Permittees during MRP 2 assessed the benefit of other control measures, such as curb inlet screens in combination with street sweeping, in reducing the amount of trash discharged through MS4s. However, additional information is needed to determine the effectiveness of curb inlet screens in reducing trash within a given trash management area. Permittees may demonstrate through further assessment and study, as described below, that the installation and appropriate maintenance of curb inlet screens, accompanied by street sweeping at an appropriate frequency, within Moderate trash generation areas can effectively reduce the trash generation rate to Low under the following conditions:

- (a) Permittees shall propose an acceptable method to verify that the area where curb inlet screens have been or will be installed are Moderate trash generating. Permittees shall also propose an appropriate method and frequency of verification, post installation, on the change (if any) in the trash generation rate following the installation of curb inlet screens.
- (b) Permittees shall propose an appropriate street sweeping frequency where curb inlet screens are installed that, when implemented, effectively reduces the area's trash generation rate to Low.
- (c) At a minimum, Permittees shall evaluate street sweeping effectiveness based on multiple factors other than frequency, and sufficient to allow a determination of proper and effective street sweeper access. Examples of additional evaluations that could be completed include effectiveness associated with enhanced street/curb accessibility via proper signage, ticketing, and towing vehicles when appropriate.
- (d) The inspection and maintenance of each curb inlet screen shall be conducted at a frequency sufficient to ensure the screen is functioning appropriately, e.g., a screen is not stuck in an open position or plugged, including plugging of the screen leading to opening of the screen under flows less than those described in Provision C.10.a.ii.(a).
- (e) Permittees shall propose an appropriate method of covering/blocking horizontal surface grates during street sweeping events (to prevent

trash from being swept into the grates), and an appropriate method for capturing smaller pieces of trash/debris from entering the MS4 via the horizontal surface grates.

- (f) Permittees shall submit the results of the additional study, as described above, for Executive Officer approval. The report must appropriately describe and demonstrate the conditions under which the combined use of curb inlet screens and street sweeping effectively reduce the trash generation rate of an area from Moderate to Low.

C.10.c. Requirements for Flood Management Agencies

Flood management agencies must continue to implement requirements for trash capture systems, as specified in Table 10-1, below. Flood management agencies must also implement trash control measures such as trash pickups and installation of trash receptacles, to control Moderate, High, and Very High trash generation areas within their jurisdiction including, but not limited to, parking lots, trailhead areas, and along recreational paths and trails, and demonstrate effectiveness of these trash control measures as specified in Provision C.10.b.iii.

Table 10-1. Requirements for Flood Management Agencies

Flood Management Agency	Trash Capture Requirement
Santa Clara Valley Water District	4 trash booms or 8 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda County Flood Control Agency	3 trash booms or 6 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda Co. Zone 7 Flood Control Agency	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Contra Costa County Flood Control Agency	2 trash booms or 4 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
San Mateo County Flood and Sea Level Rise Resiliency District	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Vallejo Flood & Wastewater District	1 trash boom or 2 outfall capture devices or equivalent measures (minimum 2 ft. diameter outfall)

C.10.d. Trash Load Reduction Plans

- i. Permittees shall maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the Provision C.10.a Trash Load Reduction requirements. A summary of any new revisions to the Plan shall be included in the Annual Report. The Plan shall describe trash load reduction control actions being implemented or planned and the trash generation areas or trash management areas where the actions are or will be implemented, including jurisdiction-wide actions such as source control ordinances. The Plans may include actions to control sources outside of the Permittees' jurisdictions that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees that choose to implement such control actions may account for them towards meeting the Provision C.10.a Trash Load Reduction requirements as long as they can demonstrate the controls will be sustained, and they quantify the sustained load reduction benefit (relative to control actions in the trash generation areas or trash management areas in their jurisdiction that drained to the affected receiving water).
- ii. Permittees shall calculate their trash load reduction, relative to 2009 baseline conditions, without the trash load reduction offsets described in Provision C.10.f, as of June 30, 2023. If that reduction is less than 90 percent, then Permittees shall develop and implement an updated Trash Load Reduction Plan. Pursuant to Provision C.22.c, the updated Trash Load Reduction Plan shall include a schedule of additional trash load reduction implementation actions sufficient to achieve compliance with the 90 percent compliance benchmark within a reasonable timeframe, and the 100 percent reduction from 2009 levels, achieved through implementation of full trash capture, or other equivalent actions, consistent with the requirements of this Provision, by June 30, 2025. Permittees shall submit their updated Trash Load Reduction Plans with their 2023 Annual Report.
- iii. Permittees unable to attain 100 percent trash load reduction, relative to 2009 baseline conditions, by June 30, 2025, while accounting for credits from new source controls (as described in Provision C.10.b.v) may be granted additional time until December 31, 2025, and East Contra Costa County Permittees until June 30, 2026, to achieve 100 percent reduction via full trash capture, or equivalent, contingent on developing and implementing an approved Direct Discharge Control Plan as described in Provision C.10.f.ii.

C.10.e. Impracticability Report

Permittees may collectively submit a programmatic report by March 31, 2023, for the approval of the Executive Officer, that describes conditions under which

it is impracticable to control trash via full trash capture devices. The impracticability report shall include, but not be limited to, the following:

- i. A description of the engineering constraints that prevent the installation of full trash capture devices.
- ii. A process for evaluating and determining impracticability of full trash capture devices.
- iii. Alternative Controls: The report shall include alternative controls or a combination of controls that may be implemented to reduce trash loads to meet the requirements and deadlines in Provision C.10.a. Examples of alternative controls include, but are not limited to, requiring businesses or property owners to pick up litter, successful implementation of excess trash receptacles and collection services, increased code enforcement or parking enforcement/ticketing/towing, additional trash pick-ups, street sweeping, assessment and execution of cooperative implementation opportunities with Caltrans or neighboring Permittees, curb inlet screens, and long term measures such as pump station or storm drain retrofits, implementation of green stormwater infrastructure that controls trash, or changes to the catchment to allow effective implementation of full trash capture measures.
- iv. Permittees shall use an approved trash impracticability report in developing the updated Trash Load Reduction Workplans required by Provision C.10.d.

C.10.f. Optional Trash Load Reduction Offset Opportunities

- i. **Creek and Shoreline Cleanup** – A Permittee may offset part of its Provision C.10.a trash load percent reduction requirement by conducting cleanup of creek and shoreline areas. The creek and shoreline cleanup efforts should be conducted at a minimum frequency of twice per year, and sufficient to demonstrate sustained improvement of the creek or shoreline area. The maximum offset that may be claimed is ten percent. Offsets for creek and shoreline cleanups will no longer be applicable after June 30, 2025.

A Permittee may claim a load reduction offset of one percent for the June 30, 2023 mandatory trash reduction compliance benchmark for each total of trash volume removed from cleanups that is ten percent of the Permittees' 2009 trash load volume estimates, based on its trash generation maps and average categorical trash generation rates (see Provision C.10.a.ii), in accordance with the following formula:

1% Reduction Offset (Volume) = $(12 + 4 A_{H(2009)} + A_{M(2009)}) OF$

where:

$A_{VH(2009)}$ = total amount of 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of 2009 moderate trash generation category jurisdictional area

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

OF = offset factor equal to (7.5×0.1) for the 2023 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

- ii. **Direct Trash Discharge Controls** – Permittees with an approved Direct Discharge Control Plan (DDCP) may claim up to fifteen percent using the Provision C.10.f.i formula towards offsetting their Provision C.10.a trash load percent reduction requirement. The DDCP shall include a detailed description of control measures the Permittee will implement to control the direct discharge of trash to receiving waters from non-storm drain system sources. Offsets for direct discharge controls will no longer be applicable after June 30, 2025.

Permittees wishing to submit a new DDCP pursuant to Provision C.10.d.iii shall submit the DDCP for approval no later than April 1, 2024. Permittees with an existing DDCP approved during the Previous Permit shall submit an updated DDCP for approval no later than January 3, 2023, in order to continue claiming trash load percent reduction offsets. DDCPs shall be sufficient to provide trash reduction benefits equivalent to or greater than the areas not yet in compliance, as calculated using the formula in Provision C.10.b.iv, and shall include:

- (a) A description of sources of the directly discharged trash;
- (b) A description of control actions that will be implemented during the permit term to prevent or reduce direct discharge trash loads, including those associated with unsheltered homeless populations and illegal dumping, in a systematic and comprehensive manner;
 - (i) For Permittees whose DDCPs address significant discharges from populations experiencing unsheltered homelessness,

systematic and comprehensive implementation of control actions shall include a commitment to, and a plan for, increasing the provision of emergency, transitional, and/or permanent housing, and the following services: trash and sanitary services, and other services which are necessary to reduce discharges associated with unsheltered homelessness, such as RV safe parking areas and pump out services, and social services that can help the unsheltered homeless transition to housing.

The DDCP shall prioritize providing housing and services to people experiencing unsheltered homelessness who are living near receiving waters.

The DDCP shall document the existing capacities for housing and services as of the time of the DDCP's submittal, and include projections of changes to those capacities for each subsequent year during the Permit term.

- (ii) For Permittees whose DDCPs address significant discharges from illegal dumping, systematic and comprehensive implementation of control actions shall include a commitment to, and a plan for, actions that will prevent direct discharges of trash to receiving waters from illegal dumping. Such actions include, but are not limited to, abating illegal dumping sites, providing dumping vouchers (particularly to socioeconomically disadvantaged communities), holding free waste drop-off events, and implementing onsite structural BMPs to prevent direct discharges from illegal dumping sites to receiving waters.

The DDCP shall prioritize addressing illegal dumping that occurs near receiving waters.

The DDCP shall document existing sites where illegal dumping occurs, controls at illegal dumping sites, voucher and free waste drop-off programs, and include projections for reductions in illegal dumping, increases of controls at illegal dumping sites, and expansions of (or the creation of) programs to control illegal dumping, such as dumping voucher programs and waste drop-off events, for each subsequent year during the Permit term.

- (iii) For Permittees whose DDCPs address significant discharges from both unsheltered homeless populations and illegal dumping sites, Permittees shall submit DDCPs in compliance with both Provisions C.10.f.ii.b.(i) and C.10.f.ii.b.(ii).

- (c) A map of the affected receiving water area and associated watershed;
and
- (d) A description of how effectiveness of controls will be assessed, including documentation of controls, quantification of trash volume controlled, and assessment of resulting improvements to receiving water conditions.

C.10.g. Reporting

Each Permittee shall provide the following in each Annual Report or otherwise by the date specified:

- i. With each Annual Report, a summary of trash control actions within each trash management area, including the types of actions, levels of implementation, areal extent of implementation, and whether the actions are ongoing or new, including initiation date.
- ii. With their 2024 Annual Report, Permittees shall submit a revised trash generation area map or maps, as described in Provision C.10.a.ii.
- iii. With each Annual Report, a summary of implementation actions and progress toward meeting the July 1, 2025, requirement for all private lands to implement full trash capture systems, or be managed with trash discharge control actions equivalent to or better than full trash capture systems, as required in Provision C.10.a.ii.(b).
- iv. With each Annual Report, certification that each of its full trash capture systems is operated and maintained to meet full trash capture system requirements; a description of any system(s) that did not meet full trash capture system requirements (e.g., due to plugging or overflowing); and any corrective actions taken.
- v. With each Annual Report, an accounting of its non-full trash capture system trash control actions assessments by providing a summary description of assessments in each of its trash management areas, including the number and dates of observations.
- vi. Permittees unable to attain the 90 percent mandatory trash reduction compliance benchmark by June 30, 2023, via full trash capture, or equivalent, shall, by June 30, 2023, submit a notice of noncompliance, pursuant to Provision C.22.c and an updated Trash Load Reduction Plan as described in Provision C.10.d.ii.
- vii. With their 2023 Annual Report, Permittees shall submit a report evaluating their trash reduction, relative to 2009 baseline conditions, as of June 30, 2023, without including offsets. Permittees unable to meet the 90 percent mandatory trash reduction compliance benchmark without the trash load reduction offsets

described in Provision C.10.f shall submit, with their 2023 Annual Report, an updated Trash Load Reduction Plan as described in Provision C.10.d.ii.

- viii.** Permittees unable to attain 100 percent trash load reduction, relative to 2009 baseline conditions, by June 30, 2025, while accounting for credits from new source control (as described in Provision C.10.b.v) shall, by June 30, 2025, submit a notice of noncompliance pursuant to Provision C.22.c, including a plan to come into compliance with the 100 percent trash load reduction requirement. Permittees may be granted additional time until December 31, 2025, and East Contra Costa County Permittees until June 30, 2026, to achieve 100 reduction via full trash capture, or equivalent, contingent on developing and implementing a direct discharge control plan (DDCP) as described in Provision C.10.f.ii.

Permittees, except East Contra Costa County Permittees, that are granted additional time until December 31, 2025, to attain 100 percent reduction via full trash capture, or equivalent, shall submit by December 31, 2025, either a report that confirms that they reached 100 percent trash load reduction by December 31, 2025, or a notice of noncompliance pursuant to Provision C.22.c.

- ix.** By March 31, 2023, Permittees may collectively submit a programmatic report for the approval of the Executive Officer, that describes typical conditions where it may be impracticable to control trash via full trash capture devices, as described in Provision C.10.e.
- x.** With the 2024 Annual Report, Permittees that offset part of their Provision C.10.a trash load percent reduction requirement through additional cleanup of creek and shoreline areas, as described in Provision C.10.f.i, shall submit a summary of the additional cleanup actions implemented, and the benefit to water quality achieved through those actions.
- xi.** Starting with the 2023 Annual Report, Permittees with approved DDCPs shall provide the following information in each Annual Report for which they use an offset from the implementation of Provision C.10.f.ii towards their trash load percent reduction:

- (1) For Permittees whose DDCPs address significant discharges from unsheltered homeless populations, the following information for the current year, and for each prior year of the Permit term:

The estimated number of people experiencing unsheltered homelessness in their jurisdiction; the estimated number of people experiencing unsheltered homelessness living within approximately 500 feet of receiving waters; the estimated portion of those populations provided housing as described in Provision C.10.f.ii.b.(i); the estimated portion of

those populations served with the services described in Provision C.10.f.ii.b.(i); the number and scope of sanitation controls and services provided to homeless encampments; the number and scope of trash controls and services provided to homeless encampments; and the number and scope of sanitary cleanouts and other services provided to RVs. Each of these reporting elements shall be accompanied by a narrative description.

- (2) For Permittees whose DDCPs address significant discharges from illegal dumping sites, the following information for the current year, and for each prior year of the Permit term:

The total number of active illegal dumping sites; the number of active illegal dumping sites within approximately 500 feet of receiving waters; the number of illegal dumping sites where trash was collected and the amount of material collected; dumping vouchers provided (and who they are provided to); dumping vouchers used; and outreach and education provided to the public regarding illegal dumping and the availability of dumping vouchers. Each of these reporting elements shall be accompanied by a narrative description.

- (3) For Permittees whose DDCPs address significant discharges from both unsheltered homeless populations and illegal dumping sites, the Permittees shall report on both Provision C.10.g.xi.(1) and C.10.g.xi.(2) in each Annual Report.

C.11. Mercury Controls

The Permittees shall implement the following control program for mercury. This control program consists of load reduction assessment, source control measures, treatment control measures, measures to reduce risk to consumers of Bay fish, and reporting on all these measures according to the provisions below. The provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs for those waters identified therein and reduce mercury loads by approximately 10 kg/yr, making substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The San Francisco Bay mercury TMDL implementation plan calls for attainment of the regionwide, urban runoff wasteload allocation of 82 kg/yr by February 2028. This mercury wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 78 kg/yr compared to loads estimated using data collected prior to development of the TMDL. To measure progress, the TMDL implementation plan calls for attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation. This interim loading milestone has been achieved. The Permittees may comply with any requirement of this Provision through a collaborative effort and are encouraged to do so.

C.11.a. Assess Mercury Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall implement an assessment methodology and data collection program to quantify, in a technically sound manner, mercury loads reduced through implementation of pollution prevention, source control, and treatment control, green stormwater infrastructure and other measures taken as part of the mercury control program defined by this provision. A technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report and updated through reporting during the last Permit term as part of Reasonable Assurance Analysis reporting submitted by all Programs in September 2020. This accounting system describes calculation methodologies, data requirements, and model parameters used to quantify the load reduction for each type of control measure. The Permittees shall use the assessment methodology to demonstrate the load reductions achieved during this Permit term as well as progress toward achieving the MRP program area mercury TMDL wasteload allocations. The Permittees shall update this assessment methodology as necessary for use in the subsequent permit term.
- ii. **Implementation Level** – The Permittees shall quantify the mercury load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures implemented

during this Permit term as described in Provisions C.11.b through C.11.e. For this Permit term, the Permittees will achieve a regionwide total load reduction of approximately 10 kg mercury/yr if they implement effective mercury control measures consistent with all requirements of Provisions C.11.b through C.11.g. The Permittee-specific portion of the regionwide mercury load reduction estimate shall be based on the proportion of county population in each municipality.

iii. Reporting

- (1) In each Annual Report, Permittees shall submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.
- (2) In the 2026 Annual Report, Permittees shall report the total loads reduced using the assessment methodologies described and cited in the Fact Sheet to demonstrate cumulative mercury load reduced from each control measure implemented since the beginning of the Permit term. This report shall also include an estimate of load reductions from control measures taking place after the 2026 Annual Report submittal but before the end of the permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates.
- (3) In their 2026 Annual Report, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess mercury load reductions from control measures in the subsequent Permit. Any refinements to the methodologies shall be subject to public review.

C.11.b. Program for Source Property Identification and Abatement

- i. **Task Description** – Permittees shall investigate, using both conventional sampling and laboratory analysis techniques, land areas that likely contribute mercury to municipal separate storm sewer system (MS4s). These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). For those properties or land areas found to be contributing substantial amounts of mercury or where high mercury concentrations are found (generally areas with sediment concentrations greater than 0.5 mg Hg/kg), Permittees shall take action to abate the mercury sources into their MS4s or refer the properties to the Water Board for follow-up measures. Historical monitoring data suggest that mercury concentrations on or near source properties are similar to those found in urban areas in general so identification of source properties for referral may be based on presence of high PCBs concentrations (generally 0.5 mg PCBs/kg) alone. For each source property referred to the Water Board,

Permittees shall implement interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implement a stormwater treatment system downstream of the property. These enhanced O&M measures shall be sufficient to intercept historically deposited contaminated sediment in the vicinity of the source area and prevent further contaminated sediment from being discharged from the source area to the storm drain system.

ii. Implementation Level – Permittees shall investigate the following acreage of likely mercury source properties (accomplished through C.12.b investigations) during the permit term.

- Alameda County: 2,620 acres
- Contra Costa County: 1,700 acres
- San Mateo County: 1,411 acres
- Santa Clara County: 913 acres
- Solano County: 21 acres

If high mercury concentrations associated with a likely source property are detected, Permittees may submit monitoring information to support estimation of the aerial yield to receive mercury load reduction credit, contingent upon implementation of interim enhanced O&M measures in the street or storm drain infrastructure adjacent to the source property or implementation of a stormwater treatment system downstream of the property.

iii. Reporting

- (1) In each of the 2022 through 2026 Annual Reports, Permittees shall report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of the old industrial land use indicated above. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.
- (2) Permittees shall report annually on ongoing enhanced O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.11.a.iii(2) on total acreage of land area investigated, area and description of properties referred, description of enhanced O&M measures, and the estimated total mercury mass load reduced (consistent with the approved accounting procedures) resulting from implementing this control measure.

C.11.c. Program for Control Measure Implementation in Old Industrial Areas

i. **Task Description** – Permittees shall implement or cause to be implemented treatment control measures, stormwater diversion to wastewater treatment facilities, redevelopment (provided GSI is implemented in compliance with C.3.b), or other control measures to achieve mercury load reductions. Permittees have substantial (totaling over 33,100 acres) areas of old industrial land use draining to an MS4 that have not been redeveloped or treated with green stormwater infrastructure or other treatment controls.

- Alameda County: 9,374 acres
- Contra Costa County: 11,199 acres
- San Mateo County: 4,450 acres
- Santa Clara County: 6,647 acres
- Solano County: 1,426 acres

Implementation of treatment control measures on 2,580 acres (which is nearly 8 percent of the land area shown above) will result in a total estimated load reduction of about 108 g mercury/yr (2,580 acres x 70% efficiency x 60 mg mercury/acre/yr estimated yield from old industrial areas, see Fact Sheet) in the area covered by the Permit. Implementation of control measures with efficiency lower than 70% will result in reduced acreage credit (for those lower efficiency control measures) toward fulfillment of the total acreage requirement shown below. The acres credited will be proportional to the ratio of implemented control measure efficiency relative to the efficiency of treatment controls (see Fact Sheet for more explanation and examples). The old industrial land use acreages to be addressed by control measure implementation by the end of the permit term and the estimated mercury load reductions (for 70% control measure efficiency) are shown below. Permittees may comply with this provision element either through implementation of control measures on the following amounts of old industrial land use, based on implementation of 70% efficient control measures, or through accounting for the mass reduction of mercury shown in parentheses. If control measures are less than 70% efficient, the required acreage shall be calculated as set forth above.

- Alameda County: 664 acres (28 grams/yr)
- Contra Costa County: 664 acres (28 grams/yr)
- San Mateo County: 445 acres (19 grams/yr)
- Santa Clara County: 664 acres (28 grams/yr)
- Solano County: 142 acres (6 grams/yr)

ii. **Implementation Level** – Permittees shall, within the permit term, implement or cause to be implemented control measures (treatment controls, diversion to wastewater treatment plants, redevelopment (provided GSI implemented in compliance with Provision C.3.b), enhanced operation and maintenance controls, or other controls) to comply with the performance metrics in Provision C.11.c.i. Use of conditionally-approved sizing criteria cited in section C.3.j(3)(b) for treatment control systems will be considered provided an analysis is performed, acceptable to the Executive Officer, to determine the reduced effectiveness of the facility sized according to these alternative criteria. If a Permittee chooses to comply by demonstrating mercury load reductions, it shall use accounting methods consistent with Provision C.11.a. Implementation of treatment controls and stormwater diversion in mercury-contaminated catchments not designated as old industrial may count toward fulfillment of the required acreage. In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence of moderate to high mercury or PCBs soil concentrations (generally soil/sediment concentrations greater than 0.3 mg mercury/kg or 0.2 mg PCBs/kg). Treatment control systems must be designed and sized consistent with Provision C.3.d – (Numeric Sizing Criteria for Stormwater Treatment Systems). Permittees may choose to implement diversions to wastewater treatment systems to address this requirement. Because of the higher removal efficiency of wastewater treatment facilities, each acre addressed by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements provided that the diversion facilities are sized and operated consistent with the sizing requirements used for non-diversion treatment facilities.

iii. **Reporting**

- (1) By March 31, 2023, Permittees shall submit plans and schedules for implementing control measures and stormwater diversion to wastewater treatment facilities in old industrial areas to address mercury load reduction requirements included in this provision. This reporting shall include maps of the areas where control measures are to be implemented, the acreage of these catchments, and a description of design and sizing features all control measures, treatment devices and stormwater diversion facilities implemented for each treated catchment.
- (2) Beginning in 2023, in each Annual Report Permittees shall submit an account of control measure and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Reporting shall include maps of the areas treated, the acreage of

catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.

- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.11.a.iii(2) on all control measures and stormwater diversion measures implemented during the permit term and provide the total acreage treated and an estimate of the total mercury mass load reduced resulting from this implementation.

C.11.d. Mercury Collection and Recycling Implemented throughout the Region

- i. Task Description** – Permittees shall promote, facilitate, and/or participate in collection and recycling of mercury containing consumer products, devices, and equipment (e.g., thermometers, thermostats, switches, bulbs). Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs, thermostats, thermometers) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and Provision C.11.d requires promotion, facilitation and/or participation in these region-wide recycling efforts to increase effectiveness and public participation.
- ii. Implementation Level** – Permittees shall promote recycling of mercury-containing products and make efforts to increase effectiveness of these recycling efforts throughout the region. Recycling of mercury-containing bulbs and thermostats alone results in a regionwide load reduction of approximately 10 kg mercury per year.⁵⁰
- iii. Reporting**
 - (1) In each of the 2023 through 2026 Annual Reports, Permittees shall report on efforts to promote recycling of mercury-containing products and efforts to increase effectiveness of these recycling efforts. Permittees shall also report on the mass of mercury-containing material collected throughout the region along with an estimate of the mass of mercury contained in recycled material using the methodology contained in load reduction accounting system described and cited in the Fact Sheet.

C.11.e. Plan and Implement Green Stormwater Infrastructure to Reduce Mercury Loads

- i. Task Description** – Permittees shall implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j. Implementation of green

⁵⁰ Geosyntec Consultants and San Francisco Estuary Institute. 2010. "Desktop Evaluation of Controls for Polychlorinated Biphenyls and Mercury Load Reduction."

stormwater infrastructure will result in a total estimated load reductions of 108 g mercury/yr (see Fact Sheet for basis of estimate).

ii. **Implementation Level** – The level of implementation is determined by the requirements of Provision C.3.j.

iii. **Reporting**

(1) In their 2026 Annual Report, Permittees shall report as part of Provision C.11.a.iii(2)) on all green stormwater projects (e.g., parcel-based, street ROW, and regional projects) implemented during the permit term and provide the total acreage treated and an estimate of the total mercury mass load reduced resulting from this implementation. This reporting shall include summary descriptions of the implemented projects including GSI type, location, and area.

C.11.f. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

i. **Task Description** – In 2020, Permittees submitted a Reasonable Assurance Analysis and plan (RAA) demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028. Permittees shall evaluate the effectiveness of all mercury control measures and update the RAA as necessary. Updates can be focused on those control measures for which new information is available and for control measures not evaluated in previous efforts. Permittees shall also prepare detailed implementation plans for all control measures to be implemented in and inform permit requirements for the subsequent permit term.

ii. **Implementation level** – Permittees shall update, as necessary, their mercury control measures implementation plan and corresponding reasonable assurance analysis from the previous permit term (2015-2020, MRP 2). The update may be focused on control measures for which new information is available or for those control measures not previously evaluated. The long-term plan must:

- (1) Identify all technically and economically feasible mercury control measures to be implemented (including GSI projects); and
- (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
- (3) Provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

Additionally, Permittees shall identify all specific control measures to be implemented, the intensity of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term. This implementation plan must include:

- (4) Identification of all control measures implemented during the current permit term and any additional control measures to be implemented in the subsequent permit term;
- (5) A description of the intensity or extent of control measure implementation (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied, etc.);
- (6) Identification of accountability metrics to track during the subsequent permit corresponding to the proposed implementation intensity; and
- (7) Estimates for load reductions to be achieved through implementation of control measures during subsequent permit term at the proposed intensity.

iii. Reporting – Permittees shall submit the updated plan and schedule no later than March 31, 2026.

C.11.g. Fate and Transport Study of Mercury: Urban Runoff Impact on San Francisco Bay Margins

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of mercury discharged from urban runoff to San Francisco Bay margin areas. The studies should focus on near-shore areas contaminated with mercury from historical activity and the expected trajectory of recovery as sources from local watersheds are reduced.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of mercury discharged in urban runoff, the sediment and food web mercury concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web mercury accumulation, especially in Bay margins, and the identification of drainages where urban runoff mercury are particularly important in food web accumulation.
- iii. Reporting** – The Permittees shall submit in their 2023 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2023 Annual Report. The Permittees shall report in the March 15, 2026, Integrated Monitoring Report the findings and results of the studies completed, planned,

or in progress as well as implications of studies on potential control measures to be investigated, piloted, or implemented in future permit cycles.

C.11.h. Implement a Risk Reduction Program

- i. Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of mercury in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence anglers and their families. The risk reduction framework developed in the previous permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. Implementation Level** – At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement. In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2026 Annual Report.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. This control program consists of load reduction assessment, source control measures, treatment control measures, measures to reduce risk to consumers of Bay fish, and reporting on all these measures according to the provisions below. The provisions implement the urban runoff requirements of the PCBs TMDL for those waters identified therein. By implementing the PCBs control measure program requirements, Permittees will make substantial progress (an estimated 1.47 kg/yr of additional load reduction) toward achieving the urban runoff PCBs wasteload allocation from the TMDL. Of the 2 kg/yr overall load allocation for urban runoff sources for the entire region, 1.47 kg/yr has been allocated to Permittees, and loads must be reduced to this level by March 2030. This PCBs wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003. The Permittees may comply with any requirement of this Provision through a collaborative effort and are encouraged to do so.

C.12.a. Assess PCBs Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall implement an assessment methodology and data collection program to quantify, in a technically sound manner, PCBs loads reduced through implementation of pollution prevention, source control, and treatment control, green stormwater infrastructure and other measures taken as part of the PCBs control program defined by this provision. A technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report and updated through reporting during the last Permit term as part of Reasonable Assurance Analysis reporting submitted by all Programs in September 2020. This accounting system describes calculation methodologies, data requirements, and model parameters used to quantify the load reduction for each type of control measure. The Permittees shall use the assessment methodology to demonstrate the load reductions achieved during this Permit term as well as progress toward achieving the MRP program area PCBs TMDL wasteload allocations. The Permittees shall update this assessment methodology as necessary for use in the subsequent permit term.
- ii. **Implementation Level** – The Permittees shall quantify the PCBs load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures implemented during this Permit term as described in Provisions C.12.b through C.12.g. For this Permit term, the Permittees will achieve an estimated regionwide total load reduction of 1.47 kg/yr PCBs if they implement effective PCBs control measures consistent with all requirements of Provisions C.12.b through

C.12.g. The Permittee-specific portion of the regionwide PCBs load reduction estimate shall be based on the proportion of county population in each municipality.

iii. Reporting

- (1) In each Annual Report, Permittees shall submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.
- (2) In the 2026 Annual Report, Permittees shall report the total loads reduced using the assessment methodologies described and cited in the Fact Sheet to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the Permit term. This report shall also include an estimate of load reductions from control measures taking place after the 2026 Annual Report submittal but before the end of the permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates.
- (3) In their 2026 Annual Report, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions from control measures in the subsequent Permit. Any refinements to the methodologies shall be subject to public review.

C.12.b. Program for Source Property Identification and Abatement

- i. **Task Description** – Permittees shall investigate, using both conventional sampling and laboratory analysis techniques, land areas that likely contribute PCBs to MS4s. These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). For those properties or land areas found to be contributing substantial amounts of PCBs or where high PCBs concentrations are found (generally areas with sediment concentrations greater than 0.5 mg PCBs/kg), Permittees shall take actions to abate the PCB sources into their MS4s or refer the properties to the Water Board for follow-up measures. For each source property referred to the Water Board, Permittees should implement interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implement a stormwater treatment system downstream of the property. These enhanced O&M measures shall be sufficient to intercept historically deposited contaminated sediment in the vicinity of the source area and prevent further contaminated sediment from being discharged from the source area to the storm drain system.

ii. Implementation Level – Permittees shall investigate the following acreage of likely PCBs source properties during the permit term.

- Alameda County: 2,620 acres
- Contra Costa County: 1,700 acres
- San Mateo County: 1,411 acres
- Santa Clara County: 913 acres
- Solano County: 21 acres

Based on data collected through investigating land areas for the presence of source properties during the previous permit terms, this level of implementation will result in PCBs load reductions of approximately 740 g PCBs/yr, 50 percent of which would be credited during this permit term contingent upon implementation of interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implementation of a stormwater treatment system downstream of the property.

iii. Reporting

- (1) In each of the 2022 through 2026 Annual Reports, Permittees shall report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of the old industrial land use indicated above. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.
- (2) Permittees shall report annually on ongoing enhanced O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii(2) on total acreage of land area investigated, area and description of properties referred, description of enhanced O&M measures, and the estimated total PCBs mass load reduced (consistent with the approved accounting procedures) resulting from implementing this control measure.

C.12.c. Program for Control Measure Implementation in Old Industrial Areas

i. Task Description – Permittees shall implement or cause to be implemented treatment control measures, stormwater diversion to wastewater treatment facilities, redevelopment (provided GSI is implemented in compliance with

Provision C.3.b), or other control measures to achieve PCBs load reductions. Permittees have substantial (totaling over 33,100 acres) areas of old industrial land use draining to an MS4 that have not been redeveloped or treated with green stormwater infrastructure or other treatment controls.

- Alameda County: 9,374 acres
- Contra Costa County: 11,199 acres
- San Mateo County: 4,450 acres
- Santa Clara County: 6,647 acres
- Solano County: 1,426 acres

Implementation of treatment control measures on 2,580 acres (which is about 8 percent of the land area shown above) will result in a total estimated load reduction of about 467 g PCBs/yr (2,580 acres x 10% of area x 70% efficiency x 259 mg PCBs/acre/yr estimated yield from old industrial areas, see Fact Sheet) in the area covered by the Permit. Implementation of control measures with efficiency lower than 70 percent will result in reduced acreage credited (for those lower efficiency control measures) toward fulfillment of the total acreage requirement shown below. The acres credited will be proportional to the ratio of implemented control measure efficiency relative to the efficiency of treatment controls (see Fact Sheet for more explanation and examples). The old industrial land use acreages to be addressed by control measure implementation by the end of the permit term and the estimated PCBs load reductions (for 70 percent control measure efficiency) are shown below. Permittees may comply with this provision element either through implementation of control measures on the following amounts of old industrial land use, based on implementation of 70 percent efficient control measures, or through accounting for the mass reduction of PCBs shown in parentheses. If control measures are less than 70 percent efficient, the required acreage shall be calculated as set forth above.

- Alameda County: 664 acres (121 grams/yr)
- Contra Costa County: 664 acres (121 grams/yr)
- San Mateo County: 445 acres (81 grams/yr)
- Santa Clara County: 664 acres (121 grams/yr)
- Solano County: 142 acres (26 grams/yr)

- ii. **Implementation Level** – Permittees shall, within the permit term, implement or cause to be implemented control measures (treatment controls, diversion to wastewater treatment plants, redevelopment (provided GSI implemented in compliance with Provision C.3.b), enhanced operation and maintenance controls, or other controls) to comply with the performance metrics in Provision C.12.c.i. If a Permittee chooses to comply by demonstrating PCBs load

reductions, it shall use accounting methods consistent with Provision C.12.a. Implementation of treatment controls and stormwater diversion in PCBs-contaminated catchments not designated as old industrial may count toward fulfillment of the required acreage. In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence of moderate to high PCBs soil concentrations (generally soil/sediment concentrations greater than 0.3 mg mercury/kg or 0.2 mg PCBs/kg). Treatment control systems must be designed and sized consistent with Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems). Use of conditionally-approved sizing criteria cited in section C.3.j(3)(b) for treatment control systems will be considered provided an analysis is performed, acceptable to the Executive Officer, to determine the reduced effectiveness of the facility sized according to these alternative criteria. Permittees may choose to implement diversions to wastewater treatment systems to address this requirement. Because of the higher removal efficiency of wastewater treatment facilities, each acre addressed by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements provided that the diversion facilities are sized and operated consistent with the sizing requirements used for non-diversion treatment facilities.

iii. Reporting

- (1) By March 31, 2023, Permittees shall submit plans and schedules for implementing control measures and stormwater diversion to wastewater treatment facilities in old industrial areas to address PCBs load reduction requirements included in this provision. This reporting shall include maps of the areas where control measures are to be implemented, the acreage of these catchments, and a description of design and sizing features all control measures, treatment devices and stormwater diversion facilities implemented for each treated catchment.
- (2) Beginning in 2023, in each Annual Report Permittees shall submit an account of control measure and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Reporting shall include maps of the areas treated, the acreage of catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii(2) on all control measures and stormwater diversion measures implemented during the permit term and provide the total acreage treated and an estimate of the total PCBs mass load reduced resulting from this implementation.

C.12.d. Program for Controlling PCBs from Bridges and Overpasses

- i. Task Description** – Permittees shall implement a Caltrans specification (to be developed through proposed requirement in Caltrans stormwater permit, see Fact Sheet for details) to manage, as part of bridge and overpass roadway replacement or major repair, potential PCBs-containing material in bridge roadway expansion joints. Implementation of this specification will result in a total estimated load reductions of 300 g PCBs/yr (see Fact Sheet for calculation details in the program area). Countywide programs and their member municipalities will be credited with a portion of this total load reduction in proportion to their share of population. Load reduction credit for this program will begin upon submittal of documentation demonstrating full implementation of the Caltrans specification for applicable roadway structures.
- ii. Implementation Level** – Permittees shall track the development of the Caltrans specification and develop an inventory of bridges in their jurisdictions that includes bridge ownership and a replacement/repair schedule. Finally, Permittees shall, by December 31, 2022, or six months after availability of the specification, implement or cause to be implemented the Caltrans specification during applicable replacement activities that are under the direction of the Permittee.
- iii. Reporting**

 - (1) In their 2022 Annual Report or the Annual Report immediately following availability of the specification, Permittees shall include a description of the Caltrans specification for managing PCBs-containing materials in bridge or roadway expansion joints during roadway replacement or repair.
 - (2) In their 2023 Annual Report, Permittees shall submit an inventory of bridges in the program area that includes bridge ownership and the bridge roadway replacement schedule.
 - (3) In their 2022 through 2026 Annual Reports, Permittees shall submit documentation confirming the use of the Caltrans specification (once it is available) during all instances of bridge roadway replacement or repair in their jurisdiction during that reporting year and provide an estimate of the volume of material managed and total PCBs mass load reduced resulting from implementation of the specification.
 - (4) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii.(2) an estimate of the total PCBs mass load reduced, consistent with approved accounting procedures, resulting from implementing this control measure.

C.12.e. Program for Controlling PCBs from Electrical Utilities

- i. **Task Description** – Permittees shall (1) develop and implement a program to manage PCBs in oil-filled electrical equipment (OFEE) for municipally-owned electrical utilities in the MRP program area and (2) collaborate with the Water Board to determine PCBs loadings in OFEE from non-municipally owned electrical utilities.
- ii. **Implementation Level** – Permittees shall do the following:
 - (1) Develop or improve standard operating procedures to respond to, clean up, and report spills and releases from municipally owned OFEE and fully implement these procedures.
 - (2) Develop and implement a plan to maintain and upgrade municipally owned OFEE.
 - (3) Document the PCBs loads avoided through existing and ongoing OFEE removal and replacement programs.
 - (4) Collaborate with the Water Board to request information from non-municipally owned electrical utilities. Permittees shall utilize the information to (a) determine the locations of PCBs-containing OFEE, (b) improve estimates of the total baseline mass of PCBs in OFEE in the MRP permit area, (c) evaluate the actions the non-municipally owned electrical utilities are taking to reduce or prevent the release of PCBs from their equipment and to respond to potential releases of PCBs from their equipment; and (d) identify opportunities to improve the response and cleanup protocols.
- iii. **Reporting**
 - (1) Permittees shall submit in their 2023 Annual Report the estimated PCBs loads avoided (along with supporting documentation) resulting from the removal of municipally-owned PCBs-containing OFEE through maintenance programs and system upgrades for the period 2002 to the beginning of this permit term (2023).
 - (2) Permittees shall submit in their 2023 Annual Report a description of the improved spill response and reporting practices implemented by municipally owned electrical utilities.
 - (3) Permittees shall submit in their 2024 Annual Report a summary of their plans to maintain and upgrade OFEE for municipally owned electrical utilities.
 - (4) Permittees shall submit in every Annual Report, beginning with the 2023 report, a summary of the actions undertaken during that reporting year

that remove municipally owned PCBs-containing OFEE along with the loads avoided and the details of the calculations and assumptions used to estimate the load reduced.

- (5) Permittees shall submit in their 2026 Annual Report, as part of reporting under Provision C.12.a.iii(2), the estimated PCBs loads reduced during the permit term associated with municipally owned OFEE removal resulting from maintenance programs and system upgrades.
- (6) Within 12-months of the Water Board transmitting to the Permittees information from the non-municipally owned electrical utilities, Permittees shall submit a report discussing the following, to the extent possible given any data limitations: (a) locations of the PCBs-containing OFEE still in service, (b) previous locations of PCBs-containing OFEE, and (c) opportunities to improve non-municipally owned electrical utilities' standard operating procedures for spill response, reporting, cleanup, and sampling and analysis.

C.12.f. Plan and Implement Green Stormwater Infrastructure to reduce PCBs loads

- i. **Task Description** – Permittees shall implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j. Implementation of green stormwater infrastructure will result in a total estimated load reductions of 200 g PCBs/yr (see Fact Sheet for basis of estimate).
- ii. **Implementation Level** – The level of implementation is determined by the requirements of Provision C.3.j.
- iii. **Reporting**
 - (1) In their 2026 Annual Report, Permittees shall report as part of Provision C.12.a.iii(2)) on all green stormwater projects (e.g., parcel-based, street right-of-way, and regional projects) implemented during the permit term and provide the total acreage treated and an estimate of the total PCBs mass load reduced resulting from this implementation. This reporting shall include summary descriptions of the implemented projects including GSI type, location, and area.

C.12.g. Manage PCB-Containing Materials and Wastes During Building Demolition Activities

- i. **Task Description** – Prior to issuing a demolition permit, Permittees shall implement the protocol developed during the previous permit term (see Fact Sheet for protocol description) for managing PCB-containing materials and wastes during building demolition so that PCBs do not enter MS4s. Permittees

shall also ensure construction sites are inspected during demolition and obtain verification that materials from demolished buildings are appropriately disposed.

Provision C.12.g. applies to applicable structures containing building materials with PCBs concentrations of 50 ppm or greater at the time such structures undergo demolition. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff. Applicable structures include, at a minimum, commercial, public, institutional, and industrial structures constructed or remodeled between the years 1950 and 1980. Single-family residential and wood frame structures are exempt.

Structures that are constructed or remodeled between the years 1950 and 1980 and require emergency demolition to protect public health and/or safety are exempt from implementing the protocol, but they must be reported in accordance to Provision C.12.g.iii.(3)(d)

The Town of Clayton is exempt from the requirements of Provision C.12.g. because it has demonstrated it has no applicable structures. Other Permittees may be exempted from the requirements in Provision C.12.g. if they provide evidence acceptable to the Executive Officer in their 2023 Annual Report that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

Implementation of this protocol will result in a total estimated load reduction of 2 kg PCBs/yr (see Fact Sheet for calculation details) in the program area. This constitutes an ongoing rather than a new load reduction.

ii. Implementation Level

- (1) Permittees shall implement their established protocol prior to issuing a demolition permit.
- (2) For demolition of applicable structures containing building materials with PCBs concentrations of 50 ppm or greater approved beginning July 1, 2023, Permittees shall require demolition contractors to provide notification to the Permittees, the Water Board, and U.S. EPA at least one week before any demolition is to occur.
- (3) Beginning the 2023 rainy season, Permittees shall inspect demolition sites with applicable structures containing building materials with PCBs concentrations of 50 ppm or greater pursuant to Provision C.6 to ensure that effective construction pollutant controls are used to prevent discharge into the MS4.

- (4) Permittees shall enhance their construction site control program to minimize migration of PCBs into the MS4 from applicable structures containing building materials with PCBs concentrations of 50 ppm or greater during demolition activities. Enhancements may include inspecting demolition sites monthly during demolition activities in the dry season (May – September) and requiring the demolition contractors to sweep the project sites and the streets around the property with street sweepers that will effectively remove sediment and dust. Implementation of enhancements shall begin no later than July 1, 2023.
- (5) For demolition of applicable structures containing building materials with PCBs concentrations of 50 ppm or greater approved after July 1, 2023, Permittees shall verify that PCBs in demolished buildings are properly managed to minimize transport to the MS4 by obtaining official documentation that the building materials with PCBs concentrations of 50 ppm or greater in these demolished applicable structures were disposed appropriately according to state and federal regulations.
- (6) Permittees may elect to update for use in the subsequent permit term the assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

iii. Reporting

- (1) Each Permittee seeking exemption from Provision C.12.g requirements based on lack of applicable structures must submit in its 2023 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 were single-family residential and/or wood-frame structures.
- (2) In their 2023 Annual Report, Permittees shall discuss enhancements to their construction site control program to minimize migration of PCBs from demolition activities into the MS4.
- (3) Beginning with their 2023 Annual Report, the Permittees shall provide each of the following items:
 - (a) The number of applicable structures that applied for a demolition permit during the reporting year;
 - (b) A running list of the applicable structures that applied for a demolition permit since July 1, 2019, the number of samples each structure collected, and the concentration of PCBs in each sample.

- (c) For each applicable structure, with PCBs concentrations of 50 mg/kg or greater, include the following: the project address, the demolition date, and a brief description of the PCBs-containing materials.
- (d) For each structure that was constructed or remodeled between the years 1950 and 1980 and requires emergency demolition to protect public health and/or safety, provide the following: address, date building was constructed, and date of demolition.
- (4) Beginning with their 2024 Annual Report, Permittees shall provide the following: whether the site was inspected during demolition, and for those cases where notification and advance approval from the U.S. EPA is not required and were approved for demolition after June 30, 2023, the hazardous waste manifest prepared for transportation of the material to a disposal facility.
- (5) In their 2026 Annual Report, Permittees shall submit an evaluation of the effectiveness of the protocol for controlling PCBs during building demolition as well as supporting data. This should be conducted and reported at the regional level on behalf of all Permittees and shall be considered the Report of Waste Discharge for Provision C.12.g for the next permit reissuance.
- (6) In their 2026 Annual Report, Permittees may submit for use in the subsequent permit term an updated assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs-containing materials and wastes during demolition of applicable structures.

C.12.h. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

- i. **Task Description** – In 2020, Permittees submitted a Reasonable Assurance Analysis and plan (RAA) demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030. Permittees shall evaluate the effectiveness of all PCBs control measures and update the RAA as necessary. Updates can be focused on those control measures for which new information is available and for control measures not evaluated in previous efforts. Permittees shall also prepare detailed implementation plans for all control measures to be implemented in and inform permit requirements for the subsequent permit term.
- ii. **Implementation level** – Permittees shall update, as necessary, their PCBs control measures implementation plan and RAA. The update may be focused on control measures for which new information is available or for those control measures not previously evaluated. The long-term plan must:

- (1) Identify all technically and economically feasible PCBs control measures to be implemented (including GSI projects); and
- (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
- (3) Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

Additionally, Permittees shall identify all specific control measures to be implemented, the intensity of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term. This implementation plan must include:

- (a) Identification of all control measures implemented during the current permit term and any additional control measures to be implemented in the subsequent permit term;
- (b) A description of the intensity or extent of control measure implementation (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied);
- (c) Identification of accountability metrics to track during the subsequent permit corresponding to the proposed implementation intensity; and
- (d) Estimates for load reductions to be achieved through implementation of control measures during subsequent permit term at the proposed intensity.

iii. Reporting – Permittees shall submit the updated plan and schedule no later than March 31, 2026.

C.12.i. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. The studies should focus on near-shore areas contaminated with PCBs from historical activity and the expected trajectory of recovery as sources from local watersheds are reduced.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban

runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

- iii. **Reporting** – The Permittees shall submit in their 2023 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2023 Annual Report. The Permittees shall report in the March 15, 2026, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted, or implemented in future permit cycles.

C.12.j. Implement a Risk Reduction Program

- i. **Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence anglers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. **Implementation Level** – At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement. In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. **Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2026 Annual Report.

C.13. Copper Controls

The Permittees shall implement the following control program for copper. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of Provision C.13 through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

i. **Task Description** – The Permittees shall prohibit the discharge of wastewater to storm drains generated from installing, cleaning, treating, or washing copper architectural features, including copper roofs.

ii. Implementation Level

- (1) The Permittees shall require, when issuing building permits, use of appropriate BMPs for managing copper-containing waste during and post-construction.
- (2) The Permittees shall educate installers and operators on appropriate BMPs for managing copper-containing wastes.
- (3) The Permittees shall enforce against noncompliance.

iii. Reporting

- (1) In the 2022 Annual Report, those Permittees that have not previously done so shall certify that legal authority currently exists to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs.
- (2) In the 2022 Annual Report, the Permittees shall report how copper architectural features are addressed through the issuance of building permits.
- (3) The Permittees shall report annually permitting and enforcement activities.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

i. **Task Description** – Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.

- ii. **Implementation Level** – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

iii. Reporting

- (1) In the 2022 Annual Report, the Permittees that have not previously done so shall certify that legal authority currently exists to prohibit the discharges to storm drains of water containing copper-based chemicals from pools, spas, and fountains.
- (2) In the 2022 Annual Report, the Permittees shall report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.
- (3) The Permittees shall report annually on any enforcement activities.

C.13.c. Industrial Sources

- i. **Task Description** – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

ii. Implementation Level

- (1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.
- (2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.
- (3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on site.

iii. Reporting

The Permittees shall highlight copper reduction results in the industrial inspection component in the Provision C.13 portion of each Annual Report.

C.14. Bacteria Control for Impaired Water Bodies

Provisions C.2 through C.7 contain requirements to control sources of pollutants to the Permittees' MS4s. Implementation of these requirements should control sources of bacteria⁵¹; still, exceedances of bacteria water quality objectives occur in some water bodies that receive urban runoff. Permittees identified in this Provision shall demonstrate compliance with bacteria related Receiving Water Limitations during this Permit term through the timely implementation of control measures and other actions to reduce bacteria discharges from their municipal separate storm sewer systems in accordance with the requirements of this Provision. Provision C.14.a applies to the cities of Mountain View and Sunnyvale for their discharges that are causing or contributing to exceedances of bacteria water quality objectives in Stevens Creek, Calabazas Creek, and Sunnyvale East Channel/Guadalupe Slough, water bodies without bacteria TMDLs. Provision C.14.b applies to Permittees with San Pedro Creek and Pacifica State Beach Indicator Bacteria TMDL wasteload allocations, Provision C.14.c applies to Permittees with San Francisco Bay Beaches Bacteria TMDL wasteload allocations, and Provision C.14.d applies to Permittees with Pillar Point Harbor Beaches and Venice Beach Bacteria TMDL wasteload allocations.

C.14.a. Enhanced Bacteria Control

Enhanced bacteria control requirements are applicable to the cities of Mountain View and Sunnyvale for discharges that are causing or contributing to exceedances of applicable bacteria water quality objectives in Stevens Creek (both cities), Calabazas Creek (Sunnyvale), and Sunnyvale East Channel/Guadalupe Slough (Sunnyvale).⁵² "Cities" as used in this Provision C.14.a refers to these cities.

The actions described in this Provision shall be implemented where controllable bacteria sources are located within the Cities' jurisdiction, in order to reduce bacteria inputs to the water body with bacteria exceedances.

i. Municipal Operations Bacteria Control

- (1) **Task Description** – Evaluate the potential for municipal operations to generate and cause bacteria to be transported to surface waters. Where such potential is determined to exist, develop and implement BMPs to minimize the transport of bacteria.

⁵¹ Bacteria as used herein refers to fecal indicator bacteria.

⁵² The geometric mean of indicator bacteria levels in a waterbody shall not be greater than the applicable geometric mean water quality objective in any six-week interval, calculated weekly. The indicator bacteria levels shall not be greater than the applicable statistical threshold value water quality objective in more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

- (2) **Implementation Level** – The Cities shall develop and implement BMPs to minimize potential bacteria sources, including, but not limited to, trash, human and animal fecal sources, and excessive biofilm, for the following municipal operations:
 - (a) Street and road cleaning
 - (b) Parks and municipal open space maintenance
 - (c) Sidewalk, plaza, and pavement cleaning
 - (d) MS4 component maintenance, such as cleaning biofilm from catch basins, piping, and pump stations.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, frequency and location for actions taken to reduce bacteria sources related to municipal operations.

ii. Industrial/Commercial Site Bacteria Control and Illicit Discharge Detection and Elimination

- (1) **Task Description** – Train municipal staff responsible for inspecting and enforcing industrial and commercial site controls and for detecting and eliminating illicit discharges to enhance their focus on potential bacteria sources. The Cities shall use enforcement authorities to ensure bacteria sources are controlled.
- (2) **Implementation Level** – The Cities shall enhance their efforts to ensure transport to surface waters from the following potential bacteria sources is minimized:
 - (a) Roof and exterior washoff of commercial and industrial structures and surfaces, where these sources are likely to contain bacteria, such as from rodent and bird wastes, and are likely to be discharged to receiving water
 - (b) Outdoor garbage and recycle bins
 - (c) Outdoor floor-mat washoff
 - (d) Portable toilets
 - (e) Illicit discharges to the MS4
- (3) **Reporting** – In each Annual Report, the Cities shall describe BMP, frequency, and location for actions taken to reduce bacteria sources related to Industrial and Commercial Site Bacteria Control and Illicit Discharge Detection and Elimination.

iii. Control of Bacteria Sources Related to Unsheltered Homeless Populations

- (1) **Task Description** – Evaluate the potential for bacteria transport to surface waters from areas inhabited by unsheltered homeless persons. Where such potential is determined to exist develop and implement BMPs to minimize such bacteria sources and transport.
- (2) **Implementation Level** – The Cities shall minimize the transport of bacteria from areas inhabited by unsheltered homeless persons by taking actions that may include, but are not limited to, the following:
 - (a) Provide pump-out stations, mobile pumping services, or voucher programs for proper disposal of sanitary sewage where unsheltered homeless persons reside in recreational vehicles
 - (b) Provide sanitation services, including access to running water, where feasible, at locations where homeless people live or congregate
 - (c) Establish and update sidewalk, street, and/or plaza cleaning standards for the cleanup and appropriate disposal of human waste
- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, numbers or frequency (as applicable), and locations of actions taken to reduce bacteria discharges from areas inhabited by unsheltered persons.

iv. Pet and Livestock Bacteria Source Control

- (1) **Task Description** – Evaluate the potential for domestic animal sources, such as pet waste, kennels, horse boarding facilities and trails, to generate and cause to be transported to surface waters. Where such potential is determined to exist, develop and implement BMPs to minimize such bacteria sources and prevent transport.
- (2) **Implementation Level** – The Cities shall ensure transport of bacteria from domestic animal sources to surface waters is minimized by taking the following actions:
 - (a) Enhance numbers of, and maintenance of, pet waste stations
 - (b) Inspect pet boarding facilities to ensure pet waste is managed to prevent offsite discharges
 - (c) Inspect horse boarding facilities, if any, to ensure manure is managed to prevent offsite discharges. Notify Water Board staff of facilities that should enroll in the Confined Animal Facility program.

- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, numbers or frequency (as applicable), and locations of actions taken to reduce bacteria from domestic animal sources.

v. Public Outreach on Bacteria Source Control

- (1) **Task Description** – Evaluate public outreach currently conducted to encourage bacteria pollution prevention and determine how to improve such outreach, such as, for example, by focusing outreach on certain populations or at certain locations.
- (2) **Implementation Level** – The Cities shall enhance public outreach where it is likely to improve human behavior regarding bacteria pollution prevention practices, such as, but not limited to, the following:
 - (a) Cleaning up pet waste
 - (b) Eliminating litter
 - (c) Eliminating outdoor restaurant floor mat washdown
 - (d) Using proper BMPs for sidewalk cleaning
 - (e) Covering trash storage areas
 - (f) Maintaining porta-potties properly.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the outreach messages, methods of delivery, audiences, and number of repetitions.

vi. Coordination with Sanitary Sewerage System Entities

- (1) **Task Description** – Overflows and leaks from sanitary sewage conveyance systems can cause bacteria to be transported to MS4s, and commonly the Cities are not responsible for maintenance and repair of the sanitary sewerage system. This task encourages the Cities to collaborate with the entities responsible for the sanitary sewerage system to minimize overflows and leaks.
- (2) **Implementation Level** – The Cities shall, to the extent necessary and within the limits of their authorities, collaborate with their counterparts who are responsible for maintenance of the sanitary sewerage system to assist with the following:
 - (a) Prioritize maintenance and repair in areas contributing to bacteria loads to surface waters with elevated bacteria
 - (b) Ensure rapid and thorough response to cleanup sanitary sewer system overflows

- (c) Develop lateral maintenance and replacement programs for consideration by the appropriate legal authority.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the status of any actions taken to coordinate with sanitary sewer entities.

vii. Prioritize Trash Removal to Control Bacteria Sources

- (1) **Task Description** – Evaluate the potential bacteria-reduction benefit of prioritizing trash control efforts required in Provision C.10 in areas where trash generation may be contributing to bacteria exceedances in local surface waters. Where such benefit appears significant, reprioritize trash control actions accordingly.
- (2) **Implementation Level** – The Cities shall focus some of their trash reduction efforts to areas where trash generation likely contributes to bacteria exceedances in local surface waters.
- (3) **Reporting** – In each Annual Report, the Cities shall describe how the bacteria-reduction benefit of focused trash-control efforts was evaluated, the conclusions reached, and any actions taken during the reporting period to reprioritize trash control areas.

viii. Water Quality Monitoring

- (1) **Task Description** – The Cities shall develop and implement a monitoring program to identify and characterize potential bacteria sources to receiving waters that have been found to exceed bacteria water quality objective(s), to help focus source control efforts and evaluate effectiveness of controls, and to ultimately demonstrate attainment of bacteria receiving water limitations. The monitoring program shall be designed and adapted to answer the following questions:
 - (a) What is the spatial and temporal extent of dry weather flows in the MS4?
 - (b) Are indicators of human fecal material present in both dry and wet weather flows observed in the MS4?
 - (i) If so, in which stormwater catchments are sources most prominent?
 - (ii) Where are the likely locations of these sources in the catchments?
 - (iii) What measures can be implemented to control these sources?
 - (c) Are water quality objectives being achieved during dry weather?
 - (d) Are water quality objectives being achieved during wet weather?

- (2) **Implementation Level** – At a minimum, the monitoring program shall include the following:
- (a) Sampling of all MS4 outfalls with flow during three dry weather creek walks. One to be scheduled during July / August 2022, one to be scheduled January / February 2023, and one in April / May 2023;
 - (b) Desktop and field methods based on elements described in the California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (Griffith et al. 2013);
 - (c) Geographic information system analysis of potential sources and existing bacteria control action locations to evaluate existing and identify and optimize additional bacteria controls;
 - (d) MS4 bacteria characterization monitoring at least monthly through September 2023, including two events that coincide with wet weather discharges, at a minimum of 14 sites each year to identify sources of bacteria discharges to and from the MS4 using microbial source tracking techniques to detect human genetic markers (i.e., HF183) and to evaluate effectiveness of bacteria controls, including the following:
 - (i) Identification of stormwater catchments where monitoring will be conducted;
 - (ii) Characterization of indicator bacteria, i.e., E coli, densities in subwatersheds, storm drains, outfalls, and pump stations that drain to receiving waters with excessive levels of indicator bacteria; and
 - (iii) Determination of baseline (or current) conditions against which future monitoring results can be compared following new, enhanced, or ongoing control measure implementation.
 - (e) Receiving water monitoring at least monthly, from October 2023 through September 2024, including two events that coincide with, or within 48 hours, of a storm event forecasted to be at least 0.5 inch in 24 hours, to determine E. coli densities, where salinity is less than 1 ppt, and Enterococci densities, where salinity is greater than 1 ppt, at a minimum total of 5 sites in Stevens Creek, 3 sites in Calabazas Creek, and 1 site in Sunnyvale East Channel, including the following:
 - (i) Stevens Creek immediately downstream of Homestead;
 - (ii) Stevens Creek La Avenida;

- (iii) Sunnyvale East Channel upstream of Tasman (above tidal influence);
 - (iv) Calabazas Creek downstream of Homestead; and
 - (v) Calabazas Creek upstream of Tasman.
- (3) **Reporting** – In each Annual Report, the Cities submit the results of all monitoring conducted the previous year, including parameters analyzed, frequencies, and locations, and planned monitoring for the current year, including parameters, frequencies, and locations.

ix. Compliance with Receiving Water Limitations

- (1) **Task Description** – The Cities shall determine whether discharges from their MS4s are causing or contributing to exceedances of bacteria water quality objectives in receiving waters after implementation of control measures required by C.14.a.i-vii. The Cities are expected to meet Receiving Water Limitations B.2 for applicable bacteria water quality objectives by June 30, 2027. If receiving water limitations are not met, despite a diligent effort to quantify levels and the sources of bacteria in MS4 discharges and documentation of completion of controls required by C.14.a.i-vii, then the Cities shall submit a plan for additional actions to attain the receiving water limitations.
- (2) **Implementation Level** – The Cities shall provide a comprehensive assessment of bacteria sources and bacteria controls to demonstrate compliance with receiving water limitations for applicable bacteria water quality objectives. If compliance cannot be achieved by June 30, 2027, the assessment shall describe additional control measures or increased levels of implementation for existing control measures, with an implementation schedule, and proposed milestones, that will be implemented to attain bacteria receiving water limitations as soon as possible.
- (3) **Reporting** – The Cities shall submit a Mid-Permit Interpretive Report and a Final Interpretive Report.
- (a) The Mid-Permit Interpretive Report shall be submitted by March 31, 2025, which includes the following:
- (i) All data collected through September 2024 and description of data validation and quality;
 - (ii) Description of progress towards answering questions in C.14.a.viii.(1);
 - (iii) Description of specific bacteria sources and/or specific geographic areas that receive implementation of existing control

measures, as well as recommended new, modified, or enhanced control that will be evaluated or implemented;

- (iv) Description of monitoring, subject to approval by the Water Board through a Permit amendment, to be conducted through the remainder of the Permit term to answer the questions in C.14.a.viii.(1). The monitoring shall be as comprehensive, systematic, and robust as what is required in Provision C.14.a.viii while being commensurate with the need to address and resolve bacteria exceedances in the receiving waters.
- (b) The Final Interpretive Report shall be submitted by December 31, 2026, which includes the following:
 - (i) All data collected through September 2026 and description of data validation and quality;
 - (ii) Description of progress towards answering questions in C.14.a.viii.(1);
 - (iii) Description of specific bacteria sources and/or specific geographic areas that received implementation of existing control measures, as well as new, modified, or enhanced control that were evaluated or implemented;
 - (iv) Determination if bacteria receiving water limitations have or will be met, by June 30, 2027; and
 - (v) If bacteria receiving water limitations will not be met by June 30, 2027, description of additional control measures or increased levels of implementation for existing control measures, with an implementation schedule, and proposed milestones, that will be implemented to attain bacteria receiving water limitations as soon as possible, and a proposed monitoring program designed to answer the questions in C.14.a.viii.(1) that will be implemented in the next permit term.

C.14.b. City of Pacifica and San Mateo County Bacteria Controls

The City of Pacifica (City) and San Mateo County (County) Permittees shall implement the actions in this subprovision to control fecal indicator bacteria. The City and County shall focus implementation of bacteria control measures in areas where benefits are most likely to accrue. The goal of this subprovision is to implement the urban runoff (stormwater runoff and dry weather flows) requirements of the San Pedro Creek and Pacifica State Beach Indicator Bacteria TMDL. In accordance with the TMDL, the City and County are required to meet the wasteload allocations for Pacifica State Beach by August

1, 2021, and for San Pedro Creek by August 1, 2028. The City and County may comply with any requirement of this provision through a collaborative effort.

i. Control Measures to Achieve Indicator Bacteria Wasteload Allocations

- (1) **Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to meet the stormwater TMDL wasteload allocations in the San Pedro Creek (Creek) watershed and Pacifica State Beach (Beach) Indicator Bacteria TMDL (TMDL Project Area).
- (2) **Implementation Level** – To comply with this element:
 - (a) The City and County, as appropriate, shall prohibit potential illicit discharges into their storm sewer system from sanitary sewer overflows or the sanitary sewer lines within their jurisdictions as follows:
 - (i) Ensure all sanitary sewer lines within a 2,000-foot radius of the Creek and Beach are inspected, assessed, and repaired, as needed, within 60 months of the Permit effective date;
 - (ii) Ensure at least 20 percent of the storm sewer system discharging to San Pedro Creek or Pacifica State Beach is evaluated and addressed for illicit sanitary sewer connections each year to prevent discharges from the sanitary sewer lines; and
 - (iii) Coordinate with the responsible sanitary sewer collection agency to identify and implement BMPs to prevent sanitary sewer overflows, such as developing or enhancing a spill response plan for significant sanitary sewer overflow incident areas to decrease potential sewage discharges into the storm sewer system.
 - (b) The County shall continue to address bacteria discharges from commercial horse and dog kennel facilities (facilities) into its storm sewer system as follows:
 - (i) Inspect each facility annually for code compliance by June 30 of each year.
 - (ii) Review each facility's current manure, stormwater, and drainage management plans for code compliance by June 30 of each year.
 - (iii) Provide a copy of the facilities inspection and review reports to the Water Board in each annual report.

- (iv) Take progressive enforcement, as needed, for facilities found to be noncompliant with the County's Confined Animal Ordinance.
- (c) The City shall continue to address bacteria discharges from commercial horse facilities (facilities) into its storm sewer system as follows:
 - (i) Review each facility's compliance with the City's Administrative Policy on "Standards for Keeping Animals."
 - (ii) Review each facility's compliance with the City's Municipal Code on "Animal Excreta."
 - (iii) Conduct annual compliance review and inspection of each facility by June 30 of each year.
 - (iv) Provide a copy of the facilities inspection and review reports to the Water Board in each annual report.
 - (v) Take progressive enforcement action(s), as needed, to bring noncompliant facilities into compliance with the City's Administrative Policy on "Standards for Keeping Animals" and Municipal Code on "Animal Excreta."
- (d) The City shall continue to maintain existing and any new dog waste clean-up signs, waste bag dispensers, and trash cans within the TMDL Project Area.
- (e) The City shall continue to implement a visual inspection and cleanup plan for high dog waste accumulation areas along the Creek and its tributaries. From April 1 through October 31, inspections and cleanups shall, at a minimum, be conducted on a quarterly basis (e.g., once each in April, July, and October). From November 1 through March 31, inspections and cleanups shall be conducted prior to forecast rain events with a forecast rainfall depth of 0.2 inches or more (as measured at Half Moon Bay Airport (KHAF) Meteorological Station, or comparable site), and at a frequency of no less than once a month.
- (f) The City shall continue to implement a pet waste public outreach and education campaign that, at a minimum, includes all the following:
 - (i) Establish a public pet waste management stakeholder group (e.g., formal or informal dog owners club).
 - (ii) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Creek and Beach to play on the local television station and to include in print ads in the Pacifica Tribune.

- (iii) Distribute a mailer with an informational brochure to residents and businesses describing proper pet waste management, the linkage of the watershed to the Creek and Beach, and the adverse impact on those water bodies and those recreating in them from improper pet waste management.
 - (iv) Maintain a web page to the City website with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Creek and Beach and public health.
 - (v) Create and implement a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Creek and Beach.
 - (vi) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
 - (g) The City and County, based on the results of the source characterization and BMP effectiveness, and wasteload allocation attainment analyses described in Provision C.14.b-iii, shall modify or refocus control measure implementation efforts as appropriate, at a frequency of no less than every two years.
- (3) **Reporting** – No later than March 15 of each year, the City and County shall submit a comprehensive TMDL Status and Monitoring Report, reporting on the specific control measures (as listed in Provision C.14.b.1.ii) that have been implemented in the TMDL Project Area during the foregoing October 1 through September 30 period. This report shall include:
- (a) The number, type, and locations and/or frequency (if applicable) of control measures;
 - (b) The description, scope, and start date of pollution prevention measures; and
 - (c) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

ii. **Water Quality Monitoring to Assess Attainment of Wasteload Allocations**

- (1) **Task Description** – Permittees shall determine whether the TMDL wasteload allocations are attained.
- (2) **Implementation Level** – The City and County shall conduct attainment water quality monitoring activities as follows:
 - (a) **Sample Locations** – Two stations shall be monitored: the mouth of San Pedro Creek (Creek Mouth) and Pacifica State Beach (the original station, as of the TMDL’s adoption date of November 2012, which was located approximately 300 feet north of the Creek mouth, and at shin depth, originally referred to as Linda Mar #5 in the TMDL Staff Report, but currently referred to as Linda Mar #7). The locations of these stations are shown in the TMDL Staff Report.
 - (b) **Sampling Frequency** – The two attainment stations shall be monitored weekly on an ongoing basis for fecal indicator bacteria. The weekly sampling shall occur year-round regardless of weather conditions, provided the conditions are safe for field staff to collect the samples.
 - (c) **Sampling Constituents** – Samples collected from the Creek Mouth shall be analyzed for *E. coli* and total coliform. Samples collected from Linda Mar #5 station shall be analyzed for *Enterococcus*, fecal coliform, and total coliform.
 - (d) The City and County shall analyze the results of the attainment monitoring and compare the results to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL.
- (3) **Reporting** – In Annual TMDL Status and Monitoring Reports submitted on March 15 each year, the City and County shall analyze, summarize, and report the results of the ongoing attainment monitoring, as follows:
 - (a) The City and County shall complete a data evaluation, which shall focus on determining whether the TMDL wasteload allocations are being attained in the Creek and at the Beach.
 - (b) The indicator bacteria results from the attainment monitoring stations (Creek Mouth and original Linda Mar #5 station (currently called Linda Mar #7), located 300 feet north of the Creek mouth at shin depth) shall be compared to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL (Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach: Final Staff Report for Proposed Basin Plan Amendment. Water Board, 2012. Accessible at:

https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/pacificabacteria/Final%20Staff%20Report.pdf).

- (c) The data evaluation shall include tabulation and review of local rainfall data to determine whether the weekly attainment monitoring sampling events occurred during dry weather or wet weather.
- (d) An ongoing quantitative analysis of trends (from initial year) in bacteria densities and exceedances of applicable water quality objectives at the two attainment stations shall be conducted and reported annually.
- (e) A detailed and comprehensive assessment of wasteload allocation attainment by the end of year 4 of the Permit term shall be completed. If wasteload allocations are not achieved by the end of the Permit term, no later than 180 days prior to Permit expiration, the City and County shall submit a plan in their Report Of Waste Discharge, acceptable to the Executive Officer, that describes additional control measures or increased levels of existing control measures that will be implemented to prevent or reduce discharges of bacteria to storm sewer systems to attain wasteload allocations. The plan shall include implementation methods, an implementation schedule, and proposed milestones.

iii. Water Quality Monitoring – Characterize Bacteria Sources, Assess BMP Effectiveness

- (1) **Task Description** – The purpose of characterization monitoring is to better characterize indicator bacteria contributions from specific sources and to evaluate control measure effectiveness. The characterization monitoring shall provide data to:
 - (a) Characterize indicator bacteria densities in subwatersheds, storm drain outfalls, and pump stations that have not been sampled in the past. Results of the investigation may be used to drive future control measure actions.
 - (b) Establish baseline (or current) conditions against which future monitoring results can be compared following new or ongoing control measure implementation.
 - (c) Characterization monitoring shall be conducted every other year on a water year basis (i.e., October 1 through September 30), continuing on the existing ongoing monitoring schedule. Characterization monitoring shall assess E. coli densities throughout the San Pedro Creek watershed. Human-, horse-, and dog-specific genetic markers shall be analyzed for a subset of the samples to investigate whether these species contribute fecal contamination to the Creek. The

characterization monitoring shall be iterative in nature and allow for flexibility of design and details in future years. Subsequent years of characterization monitoring, at a minimum, shall have the same level of effort as previous years; however, in future years, based on the results of the previous monitoring, alternative sampling stations may be targeted, sampling intensities may be modified, sampling frequencies may be adjusted, and/or the species-specific genetic marker sampling may be revised.

- (2) **Implementation Level** – The City and County shall conduct characterization monitoring activities as follows:
- (a) **Sampling Locations** – while based on the previous year’s results appropriate sampling locations can be selected for each monitoring year, the “Creek Mouth” site shall always be sampled during events when species-specific genetic marker samples are collected.
 - (b) **Number of Samples** – in each monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.
 - (c) **Sampling Frequency** – the characterization stations shall be sampled a minimum of eight times over the course of the water year, as follows:
 - (i) **Wet season** – four sampling events shall be conducted during the wet season months (November through March). To the extent possible, wet season sampling events shall occur during wet weather, which as defined in the TMDL is any day (e.g. 24-hour period) with 0.1 inch of rain or more and the following three days;
 - (ii) **Dry season** – four sampling events shall be conducted during the dry season months (May through September).
 - (iii) In subsequent monitoring years, based on the results of the previous year’s monitoring, the sampling frequency may be modified, as appropriate, to provide the most useful results.
 - (d) **Constituents** – All samples shall be analyzed for *E. coli*. In addition, during each monitoring year, at a minimum, samples collected at four stations during four sampling events (two wet season, two dry season) shall be analyzed for human-, horse-, and dog-specific genetic markers to assess temporal and spatial fecal waste contributions from the targeted host species to the Creek and Beach.
 - (e) **Monitoring Protocols and Data Quality** – Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance

Project Plan (QAPP) for applicable parameters, including data quality objectives, field, equipment, and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

- (f) Future Revisions – Any and all changes to the characterization monitoring plan in future years shall be submitted to the Executive Officer for review and acceptance no later than 90 days prior to implementation.

(3) Reporting

- (a) In their Annual TMDL Status and Monitoring Reports the City and County shall submit a comprehensive Characterization Monitoring Report reporting on any data collected during the preceding October 1 through September 30 monitoring period.
- (b) Data evaluation shall focus on addressing the following questions:
 - (i) Which land uses and/or sources contribute most to bacteria impairments in San Pedro Creek watershed?
 - (ii) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed?
 - (iii) What are the multi-year indicator bacteria density trends in the Creek and at the Beach (i.e., do control measures appear to be reducing bacteria)?

- (c) As appropriate, the Report shall include the following:
 - (i) Immediately following the Table of Contents, a Data Tables section that includes all the data collected pursuant to Provision C.14.b.iii. and contains the following information pertaining to the foregoing monitoring period:
 - a. A map showing all monitoring locations;
 - b. Immediately following the map, a single completed Locations and Parameters Table containing the following columns or rows for each location sampled: numeric site identifier, a short-hand site name such as "Creek Mouth," latitude, longitude, and parameters assessed;
 - c. Immediately following the Locations and Parameters Table, a single completed Results Table containing the following columns or rows for each location sampled: the short-hand site name and datum/result for each constituent analyzed. Constituents that exceed applicable water quality objectives shall be highlighted.
 - (ii) For all data, a statement of the data quality.
 - (iii) An analysis of the data, which includes the following:
 - a. Basic descriptive statistics using indicator bacteria data;
 - b. Identification and evaluation of any controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed;
 - c. Identification and analysis of any trends in stormwater or receiving water quality; and
 - d. Consideration of variability in the data sets.
 - (iv) A discussion of the data, which shall:
 - a. Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin or the Ocean plans;
 - b. Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - c. Identify and prioritize water quality problems;
 - d. Identify potential sources of water quality problems;

- e. Describe follow-up actions;
- f. Evaluate the effectiveness of existing control measures; and
- g. Identify management actions needed to address water quality problems.

C.14.c. City of San Mateo Marina Lagoon Beaches Bacteria Controls

The City of San Mateo (City) shall implement the actions in this subprovision to control fecal indicator bacteria. For each requirement, the City shall focus implementation in areas where benefits are most likely to accrue, i.e., where bacteria reduction is likely to reduce bacteria densities in San Mateo Lagoon and particularly at Parkside Aquatic Park Beach and Lakeshore Park Beach. Many of the required implementation actions are described in the City's TMDL Basin Plan Amendment Implementation Plan, 2018 (TMDL Implementation Plan). This subprovision implements the urban runoff requirements of the San Francisco Bay Beaches Bacteria TMDL (TMDL) applicable to the City.

i. Control Measures to Achieve Indicator Bacteria Wasteload Allocations

- (1) **Task Description** – The City shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to San Mateo Lagoon to the maximum extent practicable.
- (2) **Implementation Level** – In order to comply with this element:
 - (a) The City shall enhance its efforts to prohibit potential illicit discharges into its storm sewer system.
 - (b) The City shall expand or enhance dog waste management strategy, including installing and/or maintaining dog waste clean-up signs, waste bag dispensers, and trash cans at a minimum of two parks/open spaces near San Mateo Lagoon beaches.
 - (c) The City shall enhance its public outreach and education regarding proper management of pet waste management, dumpsters and garbage bins; proper outdoor washdown procedures (restaurant mats, dining areas, commercial areas, mobile cleaner operations) by taking a minimum of three of the following actions:
 - (i) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Lagoon.
 - (ii) Distribute a mailer to residents and businesses describing the adverse impact on water quality and recreation of improper pet waste management.

- (iii) Add information to the City website about the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Lagoon and public health.
- (iv) Create and broadcast a pre-rain pet waste cleanup public service announcement to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Lagoon.
- (v) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
- (d) The City shall continue its goose control program, as described in its TMDL Implementation Plan.
- (e) The City shall continue implementing its “Illegal Dumping Screening Program,” its “Spill, Dumping, and Complaint Response Program,” and its “Commercial/Industrial Business Inspection Plans,” including implementing associated enforcement, with a focus near the beaches as appropriate.
- (f) Once during the Permit term, determine if boaters in San Mateo Lagoon could be a source of bacteria; if yes, conduct or enhance outreach to improved boaters’ behaviors regarding bacteria sources (e.g., litter and human waste).

(3) Reporting

- (a) In each Annual Report, the City shall summarize the actions it took to satisfy the requirements in Provision C.14.c.i.(2). during the foregoing October 1 through September 30 period. This report shall include:
 - (i) The number, type, and locations and/or frequency (if applicable) of control measures; and
 - (ii) The description and scope of pollution prevention measures; and
 - (iii) A data table and graphs showing Enterococcus data collected during the reporting year for the two San Mateo Lagoon beaches, Parkside Aquatic Park Beach and Lakeshore Park Beach.
- (b) For the Annual Report due in 2023, quantitatively and qualitatively evaluate the effectiveness of the City’s actions toward wasteload allocation attainment and modify or refocus control measure implementation efforts as appropriate.

ii. Phase Two Measures

- (1) **Task Description** – If wasteload allocations are not met by December 13, 2021, the City shall implement additional bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to San Mateo Lagoon.
- (2) **Implementation Level** – In order to comply with this element:
 - (a) By July 1, 2022, the City shall submit a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include all actions described in Provision C.14.a that are likely to reduce bacteria loads to San Mateo Lagoon and particularly at Parkside Aquatic Park Beach and Lakeshore Park Beach. The plan also shall include an implementation schedule and milestones.
 - (b) By July 1, 2022, the City shall implement this plan.
 - (c) By September 30, 2022, the City shall submit a supplemental monitoring plan (supplemental to ongoing beach monitoring) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rationale to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.
- (3) **Reporting** – Starting with the 2023 Annual Report and for Annual Reports submitted in following years, the City shall summarize the actions it took to satisfy the requirements in Provision C.14.c.ii.(2) during the foregoing October 1 through September 30 period. This report shall include:
 - (a) The number, type, and locations and/or frequency (if applicable) of control measures;
 - (b) The description and scope of pollution prevention measures; and
 - (c) A data table and graphs showing enterococcus data collected during the reporting year for the two San Mateo Lagoon beaches, Parkside Aquatic Park Beach and Lakeshore Park Beach.

iii. Planning for Future Actions

- (1) **Task Description** – If wasteload allocations are not met by December 13, 2026, Permittees shall prepare a plan for additional actions to attain the water quality objective in the next permit term.
- (2) **Implementation Level** – Permittees shall prepare a plan that includes an assessment of bacteria sources and describes additional control

measures or increased levels of existing control measures that will be implemented to attain bacteria water quality objectives. The plan shall include an implementation schedule and proposed milestones. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.

- (3) **Reporting** – Submit the plan no later than 180 days prior to Permit expiration.

C.14.d. City of Half Moon Bay and San Mateo County Bacteria Controls

The City of Half Moon Bay (City) and San Mateo County (County) shall implement the actions in this subprovision to control bacteria. The City and County shall focus implementation of bacteria control measures in areas where benefits are most likely to accrue, i.e., where controls are likely to reduce bacteria mass in Pillar Point Harbor and Venice Beach. The goal of this subprovision is to implement the municipal stormwater runoff requirements of the Pillar Point Harbor and Venice Beach Bacteria TMDL and achieve the TMDL wasteload allocations. The City and County may comply with any requirement of this subprovision through a collaborative effort.

i. Control Measures to Achieve Bacteria Wasteload Allocations

- (1) **Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies within their respective jurisdictions to prevent or reduce discharges of bacteria from storm drain systems to meet the municipal stormwater runoff TMDL wasteload allocations listed in the Pillar Point Harbor and Venice Beach Bacteria TMDL.
- (2) **Implementation Level** – To comply with this element:
 - (a) The City and County each shall prepare an Initial Report acceptable to the Water Board Executive Officer that describes actions they are taking and will take to prevent or reduce discharges of bacteria to and from storm sewer systems. This report shall be submitted to the Water Board **by July 1, 2022**. The report shall include a schedule, timeline, or frequency of implementation activities for all actions, including, but not limited to, the actions described in Provision C.14.d.i.(2).(b), below.
 - (b) The City and County shall prohibit and prevent, to the maximum extent possible, discharges of bacteria into the storm sewer system within five years of the effective date of the TMDL as follows:
 - (i) Illicit sanitary sewer connections: The City and County shall train the staff responsible for enforcing industrial and commercial site

control and for detecting and eliminating illicit discharges to investigate potential connections of sanitary sewer lines to stormwater lines. The City and County shall ensure that staff conduct illicit sanitary sewer connection investigations and include such investigations in their routine inspections as well. The City and County shall use enforcement authorities to ensure transport to surface waters of the following potential bacteria sources is minimized:

- (ii) Illicit discharges to the MS4, by increasing illicit discharge investigations in the vicinity of Pillar Point Harbor and Venice Beach
 - a. Roof and exterior washoff of commercial and industrial structures and surfaces, where these sources are likely to contain bacteria, such as from rodent and bird wastes, that are likely to be discharged to receiving water
 - b. Outdoor garbage and recycle bins
 - c. Outdoor floor mat washoff
 - d. Portable toilet spills and leakage
- (iii) Human waste from homeless encampments, by implementing Provision C.14.a.iii in areas likely to discharge to the beaches;
- (iv) Pet waste
 - a. Develop and implement a visual inspection program to identify high pet waste accumulation areas and develop a cleanup plan for these areas, including specific actions before winter rains;
 - b. Install new or additional dog waste cleanup signs, waste bag dispensers, and trash bins in high dog waste accumulation areas;
 - c. Evaluate and improve the service frequency of dog waste bins, as needed; and
 - d. Enhance pet waste public outreach and education campaign that includes at least three of the following:
 - Prepare and broadcast public service announcements regarding pet waste management and associated impacts to the beaches and their catchments on social media, local television, and/or local newspapers;

- Distribute a mailer to residents and businesses describing proper pet waste management, and the adverse impact to the beaches and those recreating on them from improper pet waste management;
 - Add to or maintain web pages on the City and County websites with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality and public health;
 - Broadcast a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the beaches; and
 - Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
- e. The City and County shall include additional actions described in Provision C.14.a. in their Initial Reports and in their actions to prohibit and prevent discharges of bacteria into the storm sewer system to the extent and in the locations they deem helpful for achieving the TMDL wasteload allocation.
- (3) **Reporting** – No later than March 30 of each year, the City and County shall submit a comprehensive TMDL Implementation Status and Monitoring Report, reporting on the specific control measures (as listed in Provision C.14.d.i.(2)) that have been implemented in the TMDL Project Area during the foregoing July 1 through June 30 period. This report shall include:
- (a) The number, type, and locations and/or frequency of control measures;
 - (b) The description, scope, and start date of pollution prevention measures;
 - (c) Listing, timeline, and discussion of the actions scheduled for implementation during the upcoming year; and
 - (d) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

ii. **Water Quality Monitoring**

- (1) **Task Description** – The City and County shall ensure the beaches are sampled weekly (i.e., that current bacteria sampling continues) and shall evaluate beach monitoring data. The purposes of the water quality monitoring are to determine whether the TMDL wasteload allocations are attained; further identify and characterize the source areas or land uses with the greatest bacteria contributions; and direct adaptive implementation of controls to reduce or eliminate bacteria discharges from different sources over time.
- (2) **Implementation Level** – At a minimum, the City and County shall continue monitoring the beaches as required under California Health and Safety Code section 115880 and evaluate the resulting data. The City and County may collaboratively or individually develop and conduct a source assessment study to better characterize sources and spatial and temporal extent of bacteria impairment at the beaches and to evaluate the contribution of bacteria from natural sources.
- (3) **Reporting** -- No later than March 30 of each year, the City and County shall submit a comprehensive TMDL Implementation Status and Monitoring Report describing the monitoring that has been conducted in the TMDL Project Area during the foregoing October 1 through September 30 period. The City and County are encouraged to collaborate so as to prepare a single report on all the data. This report shall include:
 - (a) Data evaluation that addresses the following questions:
 - (i) Are the TMDL targets and allocations met at the beaches?
 - (ii) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) being contained and do control measures appear to be effective in reducing bacteria loads?
 - (iii) Which land uses and/or sources contribute most to bacteria impairments?
 - (b) The Report shall include the following:
 - (i) Information about the sampling locations, timing and frequency of sampling, analytical method(s), and a map of monitoring sites
 - (ii) An analysis of the data, which includes the following:
 - a. Basic descriptive statistics using indicator bacteria data
 - b. Identification and evaluation of available data that indicate the presence of controllable sources of fecal contamination (e.g., human, horses, and dogs)

- c. Identification and analysis of any trends in stormwater or receiving water quality
 - d. Consideration of variability in the data sets.
- (iii) A discussion of the data, which shall:
- a. Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Pillar Point Harbor and Venice Beach Bacteria TMDL;
 - b. Identify potential sources of water quality problems;
 - c. Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - d. Evaluate the effectiveness of existing control measures; and
 - e. Identify and describe the follow-up management actions needed to address water quality problems.

iii. Planning for Phase Two Actions

- (1) **Task Description** – If wasteload allocations are not met within five years of the TMDL effective date, Permittees shall develop a Phase Two Report that describes the actions being implemented and additional actions that will be taken to reduce the discharge of bacteria to the beaches.
- (2) **Implementation Level** – In preparing the Phase Two Report, Permittees shall assess bacteria sources; describe control actions taken; and describe additional control measures or increased levels of existing control measures that will be implemented to attain bacteria water quality objectives. The report shall contain an implementation schedule and proposed milestones. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.
- (3) **Reporting** – Submit the Phase Two Report within five years of the TMDL effective date.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

- i. **Discharge Type** – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:
 - (1) Flows from riparian habitats or wetlands;
 - (2) Diverted stream flows;
 - (3) Flows from natural springs;
 - (4) Rising ground waters;
 - (5) Uncontaminated and unpolluted groundwater infiltration;
 - (6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;
 - (7) Pumped groundwater from drinking water aquifers (excludes well development); and
 - (8) NPDES permitted discharges (individual or general permits).
- ii. **Implementation Level** – The non-stormwater discharges listed in Provision C.15.a.i, above, are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b, below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed

and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-vi, below.

i. Discharge Type – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

(1) Pumped Groundwater from Non-Drinking Water Aquifers

Groundwater pumped from a monitoring well, used for groundwater basin management, which is owned and/or operated by a Permittee is allowed if the following requirements are met:

(a) **Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:

- (i) The water samples shall meet water quality standards, including effluent limitations in the VOC and Fuel General Permit, NPDES Permit No. CAG912002.
- (ii) The water samples shall be analyzed using approved U.S. EPA methods: (a) U.S. EPA Method 8015 Modified for total petroleum hydrocarbons; (b) U.S. EPA Method 624.1 and 625.1 or equivalent for volatile and semi-volatile organic compounds, respectively; and (c) approved U.S. EPA methods to meet the triggers for the metals listed in the General Permit discussed in Provision C.15.b.i.(1)(a)(i), above.
- (iii) The water samples shall be analyzed for pH and turbidity.

If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

(b) **Required BMPs and Monitoring** – When greater than 2,500 gallons per day of uncontaminated (meeting the criteria in Provision C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:

- (i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream.

- (ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.
 - (iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of banks, nuisance, contamination, and excess sedimentation in the receiving waters.
 - (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.
 - (v) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.
 - (vii) The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (c) If the Permittee is unable to comply with the criteria in Provision C.15.b.i.(1)(b)(i)-(vii), discharge shall cease immediately and the Permittee shall employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES VOC and Fuel General Permit, or Groundwater General Permit, as appropriate.
- (d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

- (2) **Pumped⁵³ Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**
- (a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements. Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.
- (b) If the groundwater cannot be discharged to a landscaped area or bioretention unit and the discharge is greater than 2,500 gallons per day, it can only be considered for discharge once the following sampling is done to verify that the discharge is uncontaminated:
- (i) The discharge shall meet water quality standards, including effluent limitations in the VOC and Fuel General Permit, NPDES Permit No. CAG912002.
- (ii) The Permittees shall require that water samples from these discharge types be analyzed using the following approved U.S. EPA methods:
- U.S. EPA Method 8015 Modified for total petroleum hydrocarbons, and U.S. EPA Method 624.1 and 625.1 for volatile and semi-volatile organic compounds, respectively.
 - The sufficiently sensitive (as identified in Attachment G of NPDES Permit No. CAG912002) approved U.S. EPA Methods (40 C.F.R Part 136) for the constituents listed below that meet the corresponding Reporting Limits:

⁵³ Pumped groundwater not exempted in Provision C.15.a, or conditionally exempted in Provision C.15.b.i.(1).

Constituent	Reporting Limit
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	0.90 µg/l
Chromium III	50 µg/l
Chromium VI	8.1 µg/l
Copper	3.4 µg/l
Lead	2.6 µg/l
Manganese	50 µg/l
Mercury	4 ng/l
Nickel	10 µg/l
Selenium	4.1 µg/l
Silver	1.1 µg/l
Thallium	1.7 µg/l
Zinc	47 µg/l
Cyanide	2.9 µg/l
Chlorine, total residual	0.05 µg/l
Total Petroleum Hydrocarbons	50 µg/l

- (c) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in Provision C.15.b.i.(2)(b), above, the Permittees shall require the following:
- (i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream or if accessing the sampling points poses safety to personnel.
 - (ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.
 - (iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.
 - (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.

- (v) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.
 - (vii) The pH of discharged water shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (d) If a Permittee determines that a discharger or a project proponent is unable to comply with the criteria in Provision C.15.b.i.(2)(c)(i)-(vii), the Permittee shall require the discharge to cease immediately and require that the discharger employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES VOC and Fuel General Permit (NPDES Permit No. CAG912002), or Groundwater General Permit (NPDES Permit No. CAG912004), as appropriate.
- (e) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be reused or directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Type – Emergency Discharges of Firefighting Water and Foam

- (1) Emergency Discharges – Discharges resulting from emergency firefighting activities.
- (2) Regional Coordination
 - (a) Permittees shall collectively convene a regionwide Firefighting Discharges Working Group (Working Group) together with Water Board staff – and other stakeholders identified in Provision C.15.b.iii.(2)(vi), below – to identify and evaluate opportunities to reduce the impacts of emergency discharges to the MS4 associated

with firefighting activity. The Permittees shall collectively (e.g., through the Working Group):

- (i) Prior to the submittal of the Firefighting Discharges Report, convene the Working Group at least twice per year. Thereafter, convene the Working Group at least annually.
- (ii) Assess the adequacy of existing BMPs and standard operating procedures (SOPs) to address the potential adverse water quality impacts of firefighting water and foam discharged during emergencies (e.g., containment and cleanup),⁵⁴ including coordination within and between municipal departments, districts and jurisdictions, coordination between firefighting personnel and containment and cleanup crews, coordination with contracted staff, and coordination with relevant agencies (e.g., CalFire), as appropriate.

If the existing BMPs and SOPs need updates or are otherwise inadequate, suggest changes to those BMPs and SOPs so that they are updated and adequate. If new BMPs and SOPs are needed, recommend model BMPs and SOPs.

- (iii) Assess the adequacy of existing resources (e.g., MS4 maps and maps that identify environmentally sensitive areas) used to determine if and how firefighting water and foam discharged during emergencies will impact receiving waters,⁵⁵ in order to address pollutant discharges (e.g., by facilitating containment and cleanup).
- (iv) Investigate which firefighting foams are the least environmentally harmful (i.e., have the least adverse water quality and beneficial use effects, including those related to biodegradation, biomagnification, bioaccumulation, and acute and chronic toxicity), both for Class A foams and Class B foams. Then, develop SOPs to use the least environmentally harmful firefighting foams (and dispose of the more environmentally harmful foams) and to reduce the use of firefighting foams, without jeopardizing the protection of life or property, during emergencies.

⁵⁴ The Working Group does not necessarily have to review every single Permittee's BMPs and SOPs. It may review a representative subset.

⁵⁵ The Working Group does not necessarily have to review every single Permittee's resources. It may review a representative subset.

- (v) Prepare outreach materials on containment and cleanup BMPs and SOPs for contractors that are hired by private parties to participate in the containment and cleanup of discharges of firefighting water and foam associated with firefighting activities within their jurisdictions. Additionally, prepare outreach materials – regarding good housekeeping practices and preventive measures – for sites that are prone to firefighting emergencies. Distribute those outreach materials to all such contractors and sites by September 30, 2025.

Subsequently, if it is identified that the outreach materials need to be revised or updated, they shall be revised or updated, and then redistributed.

- (vi) Pursue coordination, information sharing, feedback and Working Group participation, from relevant agencies and organizations such as the California Department of Forestry and Fire Protection (Cal Fire), the California Department of Toxic Substances Control (DTSC), the U.S. Forest Service (USFS), the State and Regional Water Boards, permittees of other NPDES municipal stormwater permits, other state and federal agencies, and external workgroups (such as Petro-Chemical Mutual Aid), regarding interagency coordination and communication, BMPs, SOPs, and the least environmentally harmful firefighting foams.
- (vii) Discuss reporting on emergency discharges of firefighting water and foam. The purpose of this reporting is first to provide transparency about the usage and water quality impacts of firefighting water and foam, and second to track reductions in those impacts over time, which is an anticipated outcome of the implementation of Provision C.15.b.iii.

This shall include discussion of the timing of such reporting, and how that reporting will be submitted to the Water Board. This shall additionally include discussion of how reporting is triggered (e.g., if a certain level of discharge enters the MS4 system, if any level of discharge enters a receiving water, and if any level of PFAS foam is used pursuant the exemptions in SB 1044), as well as the content of the reporting (e.g., the date and time of the discharge, Material Safety Data Sheet (MSDS) and any supplemental information for that foam, the quantity of water and foam concentrate used, the quantity and rate of water and foam concentrate discharged to the MS4 and/or receiving water, the point of discharge to the MS4 and/or receiving water, and

controls implemented to contain and/or mitigate discharges and impacts).

- (b) Reporting – The Permittees shall collectively submit a Firefighting Discharges Report by September 30, 2025, that describes progress on, and recommendations regarding, the implementation of the items listed in Provision C.15.b.iii.(2)(a)(i)-(vii). The Firefighting Discharges Report shall be updated as needed on an ongoing basis, to incorporate recommendations by the Working Group.

(3) Ongoing Implementation Practices

- (a) When the Firefighting Discharges Report is submitted, the Permittees shall begin implementation of the recommendations included therein.
- (b) Permittees shall ensure proper BMPs and SOPs are included in contracts for non-municipal (contracted) staff hired by Permittees to assist with containment and cleanup, and to assist with prevention and mitigation of adverse impacts, of discharges associated with firefighting emergencies.
- (c) For large industrial sites within Permittees' jurisdictions – such as IGP sites, gas plants, gas concentration facilities, and chemical plants – Permittees shall evaluate the adequacy of those sites' BMPs and SOPs for the prevention, containment and cleanup of emergency firefighting discharges into storm drains and receiving waters within Permittees' jurisdictions, and cause those BMPs and SOPs to be improved as appropriate.
- (d) By June 30, 2027, Permittees shall require all municipal staff and contracted staff hired by Permittees that participate in the containment and cleanup of (and as appropriate, that assist with any other activities associated with mitigating the adverse environmental impacts of) discharges of firefighting water and foam from firefighting emergencies within their jurisdictions to attend at least one training on containment and cleanup BMPs and SOPs (and other BMPs and SOPs, as appropriate). Trainings may be region-wide, program wide, or Permittee-specific. Permittees are encouraged to make these trainings available to contractors hired by private parties.
- (e) Reporting
 - (i) In their Annual Reports, Permittees shall report on the implementation of Provisions C.15.b.iii.(3).(a)-(c).
 - (ii) In the 2027 Annual Reports, Permittees shall report on trainings conducted pursuant to Provision C.15.b.iii.(3)(d), including the

date(s) of training(s), topics covered, and the percentage of applicable municipal and contracted staff involved in containment and cleanup activities in attendance.

(4) Required BMPs

- (a) The Permittees shall implement and/or require firefighting personnel acting within their jurisdictions to implement BMPs and SOPs for emergency discharges – in order to reduce potential and actual water quality impacts – to the extent that the implementation of such BMPs does not interfere with immediate emergency response operations or impact public health and safety.⁵⁶
- (b) During emergency firefighting situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). Permittee staff, contractors, or firefighting personnel shall control the pollution threat from their activities during emergency firefighting situations to the extent that time and resources allow.

(5) Reporting

- (a) Upon submittal of the Firefighting Discharges Report, Permittees shall implement the reporting recommendations and guidance therein.
- (b) Otherwise, reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

(1) Required BMPs

- (a) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their storm drain systems.
- (b) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, or wash cars at commercial car wash facilities.

⁵⁶ Examples of BMPs to be considered are listed in the Fact Sheet. Where firefighting personnel may not be under the direct control of a Permittee, implement BMPs and SOPs, such as coordination and communication, identified in the Firefighting Discharges Report.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) Required BMPs

- (a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algaecide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.
- (b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.
- (c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection⁵⁷ to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.
- (d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.
- (e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from Provision C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.

- (2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa, and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

⁵⁷ This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

- (1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:
 - (a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;
 - (b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;
 - (c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;
 - (d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and
 - (e) Implementing the Illicit Discharge Enforcement Response Plan from Provision C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their storm drain systems.
- (2) **Reporting** – The Permittees shall provide implementation summaries in each Annual Report.

C.16. Discharges to Areas of Special Biological Significance

This Provision applies to stormwater discharges from the County of San Mateo into the James V. Fitzgerald Marine Reserve Area of Special Biological Significance (ASBS). As set forth in the Fact Sheet, the State Water Board granted an exception to the ASBS discharge prohibition (ASBS Exception) in the Ocean Plan to applicants, including the County of San Mateo, for their existing stormwater discharges into ASBSs, provided they receive authorization to discharge by an NPDES permit; the discharges comply with all applicable terms, prohibitions, and special conditions of Attachment B - Special Protections (Special Protections) attached to and part of the ASBS Exception; and the discharges are essential for flood control or slope stability, designed to prevent soil erosion, occur only during wet weather, and are composed of only stormwater runoff. (See State Water Board Resolution No. 2012-0012, as amended by Resolution No. 2012-0031.) This Provision serves as the NPDES authorization for the County of San Mateo to discharge stormwater into the ASBS, provided the discharge meets the requirements below.

C.16.a. Discharges to the James V. Fitzgerald Marine Reserve ASBS

- i. If the County of San Mateo meets all of the conditions set forth in Provision C.16.a.i. and C.16.a.ii., its stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS from MS4 outfalls that were constructed or were under construction prior to January 1, 2005, are permitted. Permitted discharges must comply with the following:
 - (1) Be essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (2) Be managed or controlled to prevent soil erosion;
 - (3) Occur only during wet weather; and
 - (4) Be composed only of stormwater runoff, except as provided in the Special Protections of the ASBS Exception.
- ii. The County of San Mateo shall comply with all applicable terms, prohibitions, and special conditions of the Special Protections of the ASBS Exception, including monitoring requirements, as they apply to stormwater. The Special Protections are hereby incorporated by reference into this Order and attached hereto as Attachment F. Notwithstanding anything to the contrary in this Order, the County of San Mateo shall not alter the natural ocean quality of the ASBS; shall not discharge trash into the ASBS; and shall not discharge non-stormwater into the ASBS except as provided in the Special Protections. As required by the Special Protections, the County of San Mateo shall address the preceding requirements (other than trash) in an ASBS Compliance Plan to

be approved by the Regional Water Board Executive Officer and comply with the compliance schedule set forth in the Special Protections.

iii. Reporting

- (1) In addition to the monitoring requirements of the Special Protections, the County of San Mateo shall submit a copy of its ASBS Compliance Plan for approval by the Regional Water Board Executive Officer.
- (2) If the results of any monitoring required under the Special Protections indicate that stormwater runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the County of San Mateo shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results according to the guidelines provided in the Special Protections.
 - (a) Within 30 days of the approval of the report by Regional Water Board Executive Officer, the County of San Mateo shall revise its ASBS Compliance Plan according to the guidelines provided in the Special Protections.

C.17. Discharges Associated with Unsheltered Homeless Populations

The purpose of this Provision is to identify and ensure the implementation of appropriate control measures, by all Permittees, to address non-stormwater discharges into MS4s associated with unsheltered homeless populations, including discharges from areas where unsheltered people congregate (e.g., formal and informal encampments including, but not limited to, informal tent or small cabin encampments, areas where people living in vehicles park, and safe parking areas). This Provision refers to such discharges collectively as discharges associated with homelessness.

C.17.a. Permittee Requirements

i. Task Description

- (1) Permittees shall use results from biennial point-in-time census surveys and related information, such as municipal reports, databases, complaint logs, and other efforts, to gain a better understanding of unsheltered homeless population numbers within the Permittee's jurisdiction, the locations of unsheltered homeless residents, discharges and water quality-related impacts associated with homelessness, and associated sanitation-related needs.
- (2) To encourage ongoing regional, countywide, and municipal coordination efforts, Permittees shall collectively develop a best management practice report that identifies effective practices to address non-storm water discharges associated with homelessness into MS4s that impact water quality and specific milestones for reducing such discharges within a given timeframe. The report shall:
 - (a) Describe practices that may be implemented by Permittees, including those currently being implemented, to address discharges associated with homelessness that are impacting water quality;
 - (b) Identify regional and/or countywide efforts and implementation actions to address discharges associated with homelessness (including how those efforts and actions have been affected by unsheltered homeless population growth). Include recommendations for engaging in these efforts and incorporating discharge-reduction strategies that also help meet the unsheltered population's clean water needs; and
 - (c) Identify actions taken during the COVID-19 pandemic to reduce the spread of the virus in homeless populations, such as temporarily housing homeless people in hotels, that may have reduced discharges associated with homelessness. Permittees shall consider the practicability of such actions for longer-term implementation.

This task's broader goals are to recognize non-stormwater pollutant sources associated with unsheltered homeless populations, reasons for discharges, and means by which they occur, and develop useful information that can be used toward prioritizing individual Permittee and collaborative best management practices for reducing or managing such discharges, while ensuring the protection of public health. Examples of collaborative implementation programs could include collaborative efforts between Permittees, Caltrans, sanitary sewer agencies, railroads, non-governmental organizations (NGOs), social service agencies and organizations, and other agencies.

ii. Implementation Level

- (1) Each Permittee shall submit a map identifying, within its jurisdiction, the approximate location(s) of unsheltered homeless populations, including homeless encampments and other areas where other unsheltered homeless people live. The map shall identify those location(s) in relation to storm drain inlets and existing streams, rivers, flood control channels, and other surface water bodies within the Permittee's jurisdiction. The map shall be updated once during the Permit term, in 2025. Where Permittees are working collaboratively to address discharges associated with homelessness, they may collaborate to submit a joint map that covers their respective jurisdictions.
- (2) Permittees shall report on the programmatic efforts being implemented within their jurisdiction, or at the countywide or regional level, to address MS4 discharges associated with homelessness. Examples of these efforts may include, but are not limited to: funding initiatives; adoption of ordinances to implement service programs; coordination with social services departments and NGOs; efforts to establish relationships with homeless populations; and alternative actions to reduce discharges to surface waters associated with homelessness, such as efforts towards providing housing, jobs, and related services for residents experiencing homelessness.
- (3) Each Permittee shall identify and implement appropriate best management practices to address MS4 discharges associated with homelessness that impact water quality, including those impacts that can lead to public health impacts. In addition, Permittees shall also evaluate and assess the effectiveness of those practices, specifically by reporting on the BMP control measures being implemented, the approximate portion of the Permittee's unsheltered homeless population and locations being served by those control measures, and the portion and locations of the Permittee's unsheltered homeless population not reached, or not fully reached by the implemented control measures. Examples of actions that

may be implemented include, but are not limited to, access to emergency shelters; the provision of social services and sanitation services; voucher programs for proper disposal of RV sanitary sewage; establishment of designated RV “safe parking” areas or formalized encampments with appropriate services; provision of mobile pump-out services; establishing and updating sidewalk/street/plaza cleaning standards for the cleanup and appropriate disposal of human waste; and establishing trash and waste cleanup or pickup programs within the Permittee’s jurisdiction, or at the countywide or regional level.

- (4) Permittees shall use the information generated through the biennial point-in-time census surveys and related information, and the regional coordination tasks (as described above) to review and update their implementation practices.

iii. Reporting

- (1) With the 2023 Annual Report, Permittees shall collectively submit, acceptable to the Executive Officer, a best management practice report as described in Provision C.17.a.i.(2).
- (2) With the 2023 and 2025 Annual Reports, Permittees shall submit a map as described in Provision C.17.a.ii.(1).

With the 2023 and 2025 Annual Reports, each Permittee shall report on the best management practices being implemented and include the effectiveness evaluation reporting required in Provision C.17.a.ii.(3) and additional actions or changes to existing actions that the Permittee will implement to improve existing practices.

C.18. Control of Sediment Discharges from Coastal San Mateo County Roads

San Mateo County shall implement the following control program for sediment. San Mateo County shall perform and report on the control measures according to this Provision, which implements requirements of the Pescadero-Butano Sediment TMDL and actions being taken on San Gregorio Creek to reduce sediment delivery from road-related erosion on San Mateo County-maintained roads to stream channels. For the purpose of this Provision, road-related erosion includes, but is not limited to, erosion of the road surface, road shoulder, road drainage structures such as ditches and culverts, and erosional features such as gullies, landslides, or sloughing that are road-related. Road-related means either i) the road is the primary cause of an observed erosion feature that, without the road, would not have formed or ii) the road is significantly increasing erosion rates from an erosion feature that existed prior to road construction.⁵⁸ This Provision does not apply to erosion sites that are not road-related, such as erosion from a private property that discharges onto a County-maintained road during a rain event. This Provision applies to San Mateo County-maintained roads in the Pescadero and Butano Creek watersheds (Pescadero-Butano Creek watershed), and in the San Gregorio Creek watershed in San Mateo County. This Provision is in addition to and does not supersede Provision C.2.e for Rural Road and Public Works Construction and Maintenance.

C.18.a. Road Erosion Inventory

- i. **Task Description** – San Mateo County shall prepare a road erosion inventory to identify and prioritize actions to reduce road-related erosion from hydrologically connected County roads. Hydrologic connectivity refers to the length or proportion of a road that drains runoff directly to streams or other water bodies. A hydrologically connected road is any road or road segment that has a continuous surface flow path to a natural stream channel during a storm runoff event.⁵⁹ A suitable design runoff event for most purposes is a 1-year 6-hour storm, with antecedent moisture conditions corresponding to the wettest month of the year. Connectivity usually occurs through road ditches, road surfaces, gullies, or other drainage structures or disturbed surfaces.

⁵⁸ For example, a landslide that existed prior to road construction would not be a road-related erosion feature, but a significant increase in erosion from the landslide caused by a poorly located road cross-drain would be a road-related erosion feature. Only the increased erosion caused by the cross-drain would need to be addressed under this provision.

⁵⁹ Weaver, W.E., Weppner, E.M. and Hagans, D.K. 2015. *Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads (Rev. 1st ed.)*, prepared by Pacific Watershed Associates for Mendocino County Resource Conservation District, Ukiah, California, pp. 8 – 10, 50 – 51, and 332.

ii. **Implementation Level** – To comply with this subprovision, San Mateo County shall:

- (1) Inventory all San Mateo County roads and include the following information: i) road location; ii) road segments that are hydrologically connected, iii) type of road (e.g., all-weather, seasonal, or abandoned); and iv) type of road surface (e.g., paved, gravel, or native soil).

For hydrologically connected road segments only, the Permittee shall comply with (2), (3), and (4) as follows:

- (2) All road-related erosion sites with the potential to discharge at least 5 cubic yards of sediment to streams or other water bodies shall be documented. At a minimum, the location, type, and approximate dimensions of the erosion feature, an estimate of the sediment volume that could erode, its potential for delivery to a waterbody (e.g., high, moderate, or low), a site photo, a brief description of the proposed treatment for erosion repair, and permits required for the repair shall be documented.
- (3) The location, shape (e.g., circular, elliptical, arch, box), size, and condition of all culverts along the roadway shall be documented. The following shall also be assessed:
 - (a) whether the culvert opening is clear and free of debris or sediment,
 - (b) the potential for the culvert to plug with debris carried from upstream during future runoff events; and
 - (c) the potential for flow diversion onto the roadway if the culvert is overtopped during a future runoff event.

Culvert plugging and flow diversion potential shall at a minimum be documented as 'none,' 'low,' 'moderate,' or 'high,' consistent with appropriate standards.^{60,61,62}

- (4) For culverts with a moderate to high plugging potential, the Permittee shall develop a brief description of the proposed improvement(s), priority for treatment, and required permits.

iii. Reporting – The road erosion inventory for the Pescadero-Butano Creek watershed shall be submitted to the Water Board in the 2023 Annual Report. The road erosion inventory for the San Gregorio Creek watershed shall be submitted to the Water Board in the 2025 Annual Report. The road erosion inventory shall be submitted in ArcGIS and Google Earth KML format with an accompanying report that provides all the information listed in the subprovision above, in addition to:

- (1) A summary table for both the Pescadero-Butano Creek and San Gregorio Creek watersheds that lists the total drainage area, the total length of all San Mateo County roads, the total length of all hydrologically connected San Mateo County roads; and the percentage of unpaved San Mateo County roads that are hydrologically connected.
- (2) Summary tables documenting the results of the road erosion inventory by watershed, where watershed means either the Pescadero-Butano Creek watershed or the San Gregorio Creek watershed.

New erosion sites identified during routine patrols shall be added to the road erosion inventory. San Mateo County shall provide a status update of these new erosion sites each year as part of its Annual Report.

C.18.b. Prioritized List and Schedule of Actions

- i. Task Description** – Based on the results of the road erosion inventory (C.18.a), San Mateo County shall develop a prioritized list and schedule of

⁶⁰ Weaver, W.E., Weppner, E.M. and Hagans, D.K. 2015. *Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads (Rev. 1st ed.)*, prepared by Pacific Watershed Associates for Mendocino County Resource Conservation District, Ukiah, California, pp. 99 – 106 and 136 – 150.

⁶¹ Cafferata, P., Lindsay, D., Spittler, T., Wopat, M., Bundros, G., Flanagan, S., Coe, D. and Short, W. 2017. *Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood and Sediment (Updated 2017)*, California Forestry Report No. 1 (revised), State of California Department of Forestry and Fire Protection, Sacramento, California, pp. 23 - 43.

⁶² Furniss, M.J., Flanagan, S. and McFadin, B. 2000. *Hydrologically-connected roads: an indicator of the influence of roads on chronic sedimentation, surface water hydrology, and exposure to toxic chemicals*, Stream Notes, July 2000. Stream Systems Technology Center, U.S. Forest Service, Rock Mountain Research Station, Fort Collins, Colorado.

actions to reduce road-related erosion and sediment delivery to stream channels. The goal of these efforts is to attain the following performance standards for San Mateo County roads identified in the Pescadero-Butano Sediment TMDL implementation plan:

- (1) **For Roads:** Design, construct, and maintain roads to reduce road-related sediment delivery to channels to ≤ 500 cubic yards per mile per 20-year period; or i) limit the length of unpaved roads that are hydrologically connected to 25 percent of total road length; ii) ensure culvert inlets have low plugging potential; and, iii) install appropriate best management practices, such as critical dips,⁶³ at culverted crossings that have a diversion potential; and
- (2) **For Gullies and/or shallow landslides:** Promote natural recovery and minimize human-caused increases in sediment delivery from unstable areas. Manage existing roads and other infrastructure to prevent additional erosion of legacy sediment delivery sites and/or delivery from potentially unstable areas.

ii. **Implementation Level** – To comply with this provision element, San Mateo County shall:

- (1) Develop a prioritized list of control measures and pollution prevention strategies for all road-related erosion sites and for all culvert crossings to achieve the performance standards described in C.18.b.i(1). The list shall include a brief description of the control measure(s) to be taken and a projected completion date for each control measure. For paved roads, erosion and sediment control actions could primarily focus on road crossings to meet the performance standards.
- (2) Develop a schedule to implement the prioritized list of control measures such that twenty percent (20%)⁶⁴ of the control measures for the Pescadero-Butano Creek watershed are scheduled for completion by June 30, 2027. Implementation of control measures for San Gregorio Creek is not required during this Permit term.
- (3) If the length of hydrologically connected unpaved roads identified in C.18.a exceeds 25 percent of the total San Mateo County unpaved road length in a watershed,⁶⁵ then the prioritized list and schedule shall include

⁶³ A critical dip is a low berm and/or a dip in the road surface constructed across the roadway, used to divert flow off the road that would otherwise flow down the road surface.

⁶⁴ 20 percent means 20 percent of the total estimated cubic yards of potential sediment erosion identified in the road erosion inventory required by Provision C.18.a. .

⁶⁵ 25 percent is measured from road segments located within the watershed. It excludes road segments located outside the watershed.

an implementation plan and schedule of actions to reduce the percentage of hydrologically connected unpaved roads to 25 percent or less. Examples of treatments to reduce overall hydrologic connectivity of roads are provided by Weaver et al. (2015, Chapter 4).

iii. Reporting – The prioritized list and schedule for the Pescadero-Butano watershed shall be completed and submitted to the Water Board in the 2023 Annual Report. The prioritized list and schedule for the San Gregorio Creek watershed shall be completed and submitted to the Water Board in the 2025 Annual Report. San Mateo County shall update the prioritized list and schedule annually thereafter and submit it each year with its Annual Report. The submittal shall include a list of completed, in-progress, and scheduled control measure and pollution prevention strategies and shall include at a minimum the following information for each control measure:

- (1) The project name
- (2) The project location and a brief project description
- (3) Authorizations required to implement the project, including status
- (4) The actual or estimated project start and end dates

C.18.c. Implement Control Measures to Attain Performance Standards

i. Task Description – San Mateo County shall implement control measures and pollution prevention strategies to reduce road-related sediment delivery from County roads to stream channels in the Pescadero-Butano Creek and San Gregorio Creek Watersheds. At least twenty percent (20%) of the control measures identified in Provision C.18.b.ii shall be implemented and completed in the Pescadero-Butano Creek watershed by 2027.

ii. Implementation Level – To comply with this subprovision, San Mateo County shall:

- (1) Continue to follow all the requirements of Provision C.2.e for Rural Road and Public Works Construction and Maintenance.
- (2) Based on the priority list and schedule of actions developed in C.18.b, implement the control measures and pollution prevention strategies for road related erosion sites and culvert crossings to achieve the road performance standards described in C.18.b.i.(1).
- (3) New County-maintained roads constructed on hillslopes exceeding 5 percent shall be constructed as storm-proofed roads, as defined by Weaver et al. (2015, Chapter 6), and shall meet the following specifications where applicable:

- (a) Stream crossings have a drainage structure designed for the 100-year flood flow including woody debris and sediment (Cafferata, et al., (2017)).
- (b) Stream crossings do not have the potential for flow diversion onto the roadway if the culvert is overtopped during a future runoff event.
- (c) Culvert inlets have a low plug potential (trash barriers or deflectors are installed where needed).
- (d) Culverts are installed at the base of the fill and in line with the natural channel.
- (e) Emergency overflow culverts that emerge higher in the fill have full round, anchored downspouts that extend to the natural channel.
- (f) Deep fills (deeper than a backhoe can reach from the roadbed) with undersized culverts or culverts with high plugging potential are fitted with an emergency overflow culvert.
- (g) Bridges have stable, non-eroding abutments and do not significantly restrict 100-year flood flow.
- (h) Stream crossing fills are stable.
- (i) Approaching road surfaces and ditches are hydrologically disconnected from streams and stream crossing culverts to the maximum extent feasible using road shaping and road drainage structures.
- (j) Class I (fish-bearing) stream crossings meet California Department of Fish and Wildlife and National Marine Fisheries Service fish passage criteria.
- (k) Road surfaces and ditches are hydrologically disconnected from streams and stream crossing culverts to the maximum extent feasible. Road surface runoff is dispersed, rather than collected and concentrated.
- (l) Ditches are drained by functional ditch relief culverts and/or rolling dips.
- (m) Outflow from ditch relief culverts does not discharge to streams.
- (n) Ditches and road surfaces drainage does not discharge (through culverts and/or rolling dips) onto active or potential landslides and/or into gullies.
- (o) Fine sediment contributions from roads, cutbanks, and ditches are minimized by utilizing seasonal closures and installing a variety of

surface drainage techniques including road surface shaping (outsloping, insloping, or crowning), rolling dips, ditch relief culverts, water bars, and other measures to disperse road surface runoff and reduce or eliminate sediment delivery to the stream.

New County-maintained roads that are under construction within one year of the start of this Permit term shall be exempt from this requirement (C.18.c.ii.(3)).

iii. Reporting – A report documenting project status shall be submitted with the Annual Report each year starting the first year of project implementation. The report shall include a list of projects from the priority list and schedule of actions in Provision C.18.b that have been completed or are in-progress, including:

- (1) An estimate of the potential sediment delivery to stream channels prevented by the implemented control measure or pollution prevention strategy.
- (2) The percent of control measures in the prioritized list completed to date so that progress in achieving the implementation of 20 percent of the control measures for the Pescadero-Butano Creek watershed by June 30, 2027, is documented.
- (3) A summary of projects scheduled for completion since the last Annual Report submittal that were delayed or not completed and an explanation of why they were delayed or not completed.

C.18.d. Monitoring

i. Task Description – San Mateo County shall conduct implementation, effectiveness, and forensic monitoring to assess the performance of implemented control measures.

ii. Implementation Level – To comply with this provision element, San Mateo County shall:

- (1) Conduct implementation monitoring to assess whether the implemented control measure from C.18.c was fully and properly carried out as specified. Monitoring shall be performed once and conducted via a visual observation of the completed project.
- (2) Conduct effectiveness monitoring to assess whether each of the implemented control measure(s) from C.18.c is adequately protective of water quality. Effectiveness monitoring shall be performed once and conducted via a visual inspection of the construction or repair site and the adjacent area. It shall be performed after the control measure has gone

through one year or one winter season in order to evaluate the effectiveness of the control measure during winter rain events.

- (3) Conduct forensic monitoring in cases where an implemented control measure has failed. Forensic monitoring shall be conducted via a visual inspection of the failed control measure. Site photos shall be taken to adequately document the failure and a brief description of the mechanism and/or circumstances of failure shall be documented.
- (4) Conduct routine monitoring of San Mateo County roads per the guidelines set forth in the County of San Mateo Routine Maintenance Program Manual (San Mateo County 2020, as may be amended).

iii. Reporting – San Mateo County shall document the results of the implementation, effectiveness, and forensic monitoring in a monitoring report submitted with the Annual Report each year starting in the first year of project implementation. If preferred, implementation monitoring information may be included with the implementation reporting required pursuant to Provision C.18.c.iii. The report shall include the following:

- (1) Results of implementation and effectiveness monitoring, including:
 - (a) The monitoring point location and description of the project, or a reference to the specific project in the completed projects report.
 - (b) A brief description of the visual observations made during the monitoring inspection.
 - (c) The date the monitoring inspection was conducted.
- (2) Results of any forensic monitoring conducted in the past year, including:
 - (a) The monitoring point location and description of the project, or a reference to the specific project in the completed projects report.
 - (b) Site photos documenting the failed control measure
 - (c) A brief description of the mechanism and/or circumstances of failure
 - (d) Proposed corrective measures to be taken and timeline for completion
 - (e) The date the monitoring inspection was conducted
- (3) Results of annual monitoring conducted in the past year, including:
 - (a) A summary of all unpaved roads inspected at the end of the rainy season.
 - (b) A brief description of general road conditions and any specific problems noted, particularly with regard to sediment delivery to stream

channels. These observations will be used to make annual updates to the Road Erosion Inventory as required by Provision C.18.a. Any new road-related erosion sites identified during this effort shall be documented in the report and added to the Road Erosion Inventory required by Provision C.18.a.

- (c) The date(s) the monitoring inspections were conducted.

C.19. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements

The cities of Antioch, Brentwood, and Oakley, unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District (collectively, East County Permittees), located in the Central Valley Regional Water Quality Control Board's (Central Valley Water Board's) geographic jurisdiction, are included in the definition of "Permittees" as used throughout and shall comply with all requirements of this Order No. R2-2022-0018 except as provided for in this Provision. This Provision also incorporates requirements from Central Valley Water Board's TMDLs and control programs applicable to the East County Permittees.

C.19.a. Mercury Controls

The East County Permittees are exempt from Provision C.11, Mercury Controls.

C.19.b. Polychlorinated Biphenyls (PCBs) Controls

The East County Permittees are exempt from Provision C.12, PCBs Controls.

C.19.c. Diazinon and Chlorpyrifos Controls

- i. **Task Description** – The East County Permittees shall continue compliance with the Central Valley Water Board's Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL and continue to meet wasteload allocations for diazinon and chlorpyrifos.
- ii. **Implementation Level** – The East County Permittees shall implement Provision C.9.

C.19.d. Methylmercury Control Measure Plan and Monitoring

The methylmercury wasteload allocations for the East County Permittees in the Sacramento-San Joaquin Delta Methylmercury TMDL (Resolution No. R5-2010-0043) by Delta subarea are as follows:

- Central Delta subarea: 0.75 grams/year
- Marsh Creek subarea: 0.30 grams/year
- West Delta subarea: 3.2 grams/year

Methylmercury wasteload allocations shall be met as soon as possible, but no later than the final compliance date of January 1, 2030. As part of the Delta Mercury Control Program Review, the Central Valley Water Board may adopt revised wasteload allocations and a new final compliance date.

- i. **Task Description** – Pursuant to the Central Valley Water Board’s Water Quality Control Plan for the Sacramento San Joaquin Basins’ Delta Mercury Control Program and associated Methylmercury TMDL, the East County Permittees were required to develop, conduct, and report on a methylmercury control study for urban runoff. The submitted control study⁶⁶ proposed conducting a Reasonable Assurance Analysis (RAA) to determine the achievable methylmercury load reduction. The control study also stated that monitoring will be conducted to answer the management questions outlined in Provision C.19.d.ii(2)a-e. Therefore, the East County Permittees shall submit a control measure plan and conduct a corresponding RAA as well as implement methylmercury monitoring as described below. With the Central Valley Water Board’s Executive Officer’s approval, the East County Permittees may participate in the Delta Regional Monitoring Program (Delta RMP) or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this Provision. Participation in the Delta RMP or other collective monitoring efforts shall consist of providing funds and/or in-kind services to the Delta RMP or other collective monitoring effort at least equivalent to the discontinued monitoring efforts in order for the Central Valley Water Board Executive Order to approve the alternative monitoring.
- ii. **Implementation Level** – The East County Permittees shall:
 - (1) Prepare and submit by November 1, 2022, a Control Measure Plan and schedule to achieve the TMDL wasteload allocations. The Plan shall include a corresponding RAA for total mercury and methylmercury demonstrating that sufficient control measures will be implemented during this Permit term to attain the methylmercury Delta Mercury Control Plan wasteload allocations by January 1, 2030, or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review. The Control Measure Plan, including RAA, shall comply with the following:
 - (a) The Plan shall identify all technically and economically feasible mercury and methylmercury MS4 control measures to be implemented (including green stormwater infrastructure (GSI) projects).
 - (b) The Plan shall include a schedule according to which these technically and economically feasible control measures will be fully implemented.
 - (c) The Plan shall provide an evaluation and quantification of mercury and methylmercury load reductions of such measures as well as an

⁶⁶ *Contra Costa Clean Water Program Methylmercury Control Study Final Report (Rev. 1)*, September 2020.

- evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.
- (d) The RAA for total mercury must be evaluated using the California Toxics Rule for mercury (0.05 µg/L).
 - (e) The RAA for methylmercury must be evaluated using the methylmercury load allocations specific to each Delta subarea within Contra Costa County subject to the DMCP (i.e., the Central Delta, Marsh Creek, and West Delta subareas).
 - (f) The RAA shall demonstrate quantitatively that the plan will result in mercury and methylmercury load reductions sufficient to attain the methylmercury wasteload allocations by January 1, 2030, (or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review) and address the following questions:
 - (i) What are the annual mercury and methylmercury loads from the MS4 discharge to the Central Delta, Marsh Creek, and West Delta subareas?
 - (ii) Do the mercury and methylmercury loads to each subarea meet the assigned methylmercury wasteload allocations?
 - (iii) What is the achievable mercury and methylmercury load reduction in discharges from the MS4 by implementation of reasonable, foreseeable control measures?
 - (iv) What controllable MS4 water quality factors affect methylmercury production and transport in the MS4 discharge and in the receiving waters draining to the Delta?
 - (v) Are there MS4 design features that increase or decrease mercury methylation.
 - (vi) Are there reasonable and foreseeable management actions to reduce methylmercury concentrations within the MS4 boundary?
 - (g) Permittees shall ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill Provision C.19.ii.(1)(a)-(f) have been validated through a peer review process. The East County Permittees may use the approach developed by the Contra Costa Clean Water Program or an equivalent approach developed by another program during the previous permit term.
- (2) Conduct annual monitoring in waterways within the East County Permittees' MS4 boundary to answer the questions in Provision

C.19.d.ii(2)(a)-(e). Monitoring shall include, but is not limited to, Marsh Creek, downstream of Marsh Creek Reservoir, and Central and West Delta Subarea tributaries within the MS4 boundary. Permittees shall collect fifty (50) samples throughout the Permit term, with at least eight (8) samples annually, for aqueous methylmercury analysis. Samples shall be collected in each subarea to be representative of the discharge during wet and dry year conditions and analyzed using U.S. EPA- or SWAMP-approved methods.

- (a) What are the annual methylmercury loads from the MS4 discharge to the Central Delta, Marsh Creek, and West Delta subareas?
 - (b) Do the methylmercury loads to each subarea meet the assigned methylmercury wasteload allocations?
 - (c) Are there any MS4 design features that increase mercury methylation in the discharge?
 - (d) What MS4 water quality controls have been implemented or are planned to be implemented to reduce methylmercury production and transport in the MS4 discharge?
 - (e) By January 1, 2024, address whether eutrophication and low dissolved oxygen concentrations increase methylmercury in ponded areas of Marsh Creek during low flow periods (depending on the year, low flow periods can range between mid-March and mid-November), and, if so:
 - (i) Under what hydrologic or seasonal circumstances do increased methylmercury concentrations reach the Delta?
 - (ii) Are there reasonable and foreseeable management actions to ameliorate increased methylmercury concentrations?
- (3) Prepare an Annual Mercury Monitoring Plan and submit it to the Central Valley Water Board for Executive Officer approval. The monitoring plan shall describe the annual monitoring design and specify the proposed sampling locations for methylmercury sampling required under Provision C.19.d.ii.(2).

iii. Reporting

- (1) Annual Mercury Monitoring Plan – by October 1, 2022, and annually thereafter with the Urban Creeks Monitoring Report due March 31.
- (2) Annual Report – The East County Permittees shall provide the following:
 - (a) Monitoring and assessment results answering the questions required under Provision C.19.d.ii.(2), and

- (b) Upon completion by the deadline in Provision C.19.d.ii.(1), submit the Control Measure Plan, including RAA.

A copy of each Annual Report shall also be submitted to the Central Valley Water Board.

- (3) Pollutants of Concern Monitoring Report – The East County Permittees shall report monitoring and assessment activities relevant to the Delta Methylmercury TMDL from the past water year and planned for the next water year as a separate section within the Pollutants of Concern Monitoring Report required under Provision C.8.h.iv. A copy of each Pollutants of Concern Monitoring Report shall also be submitted to the Central Valley Water Board.
- (4) Integrated Monitoring Report – The East County Permittees shall report the monitoring and assessment results as a separate section within the Integrated Monitoring Report as required under Provision C.8.h.v. A copy of each Integrated Monitoring Report shall also be submitted to the Central Valley Water Board.
- (5) The East County Permittees shall report progress on the Delta Methylmercury TMDL and recommendations for the next permit re-issuance as a separate section within the Report of Waste Discharge (ROWD) required by Provision C.25. A copy of the ROWD shall also be submitted to the Central Valley Water Board.

C.19.e. Delta Mercury Control Program Minimum BMPs

- i. **Task Description** – The East County Permittees shall implement inorganic mercury reduction BMPs as well as provide ongoing education and outreach to address mercury pollution prevention and risk reduction.
- ii. **Implementation Level** – At a minimum, the East County Permittees shall implement the following inorganic mercury reduction BMPs, consistent with the Delta Methylmercury TMDL.
- (1) **Mercury Collection and Recycling** - To minimize mercury in storm water the East County Permittees shall continue implementing:
- (a) Collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs); and
- (b) Collection, recycling and/or diversion of mercury-containing waste products (e.g., gauges, batteries, fluorescent and other lamps, switches, relays and sensors) from the waste stream from industrial and commercial entities (e.g., auto dismantlers), and municipal facilities.

- (2) **Enhanced Municipal Management Practices to Reduce Sediment Discharges** - The East County Permittees shall continue to implement BMPs to minimize sediment discharges during municipal operations and municipal maintenance activities. Municipal operations and municipal maintenance activities include but are not limited to the following: storm drain drop inlet and pipeline cleaning, landscaping, road construction, road repair, and pump station cleaning.
 - (3) **Public Education and Risk Reduction** - The East County Permittees shall continue to conduct ongoing education to the public on mercury pollution prevention and mercury risk reduction. The East County Permittees shall continue to:
 - (a) Provide mercury pollution prevention messages to residents, commercial businesses, and industrial facilities with mercury-containing products or emissions. This may be implemented as part of Provision C.7; and
 - (b) Provide notices to communities on the health risk associated with eating mercury contaminated fish. These notices shall also include the Office of Environmental Health Hazard Assessment's fish consumption advisories.
 - (4) **Methylmercury Controls** – the East County Permittees shall implement control measures that reduce mercury methylation potential and retrofit existing BMPs that show an increase of mercury methylation.
 - (a) New development projects shall use BMPs that either prevent an increase of methylmercury or have been shown to decrease methylmercury.
 - (b) For existing BMPs that increase methylmercury within subareas that are meeting the assigned wasteload allocation, retrofitting of these BMPs may occur as part of any capital improvement, redevelopment, operation, or maintenance plan as resources are available.
 - (c) For existing BMPs that increase methylmercury within subareas that are not meeting the assigned wasteload allocation, retrofitting of these BMPs shall occur as soon as feasibly possible, but no later than the final compliance date of January 1, 2030 (or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review).
- iii. **Reporting** – In each Annual Report, the East County Permittees shall:
- (1) Describe Mercury Collection and Recycling efforts.

- (2) List the municipal operations and municipal maintenance activity BMPs that are implemented to minimize sediment discharges.
- (3) Discuss the mercury pollution prevention messages provided and
- (4) Summarize tasks implemented to provide notices on the health risk associated with eating mercury contaminated fish.
- (5) Report on implementation of methylmercury controls required in C.19.2.ii.(4).

C.19.f. Pyrethroid Control Program

- i. Task Description** – The East County Permittees shall comply with the Central Valley Water Board’s conditional prohibition of the discharges of pyrethroid pesticides and associated monitoring and reporting requirements established in the Amendment to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the control of Pyrethroid Pesticide Discharges (Resolution No. R5-2017-0057).
- ii. Implementation Level** – The East County Permittees shall:
 - (1) Continue to implement a pesticide control program as required by Provision C.9, which is consistent with Central Valley Water Board requirements for a pyrethroid management plan.
 - (2) Continue pesticides and toxicity monitoring as specified in Provision C.8.g. In addition to the pollutants and organisms listed in Table 8-5, the East County Permittees shall also analyze total and particulate organic carbon, as required by the Central Valley Water Board’s Basin Plan Amendment (R5-2017-0057).
 - (3) Submit a baseline monitoring report by September 19, 2022, that:
 - (a) Summarizes the pyrethroid and toxicity monitoring results from 2012 through 2019;
 - (b) Assesses the compliance of the discharge with the conditional prohibition triggers in the Basin Plan established by Resolution No. R5-2017-0057;
 - (c) Summarizes toxicity of water and sediment samples to the test organism *Hyalella azteca*; and
 - (d) Summarizes any other pyrethroid monitoring data collected by the East County Permittees during the above period.

iii. Reporting – The East County Permittees shall:

- (1) With the 2024 and subsequent Annual Reports, provide a progress report to document the management practices that have been implemented, evaluate pyrethroid concentrations with respect to the pyrethroid triggers, and identify effective control actions to be taken in the future. A copy shall be provided to the Central Valley Water Board.
- (2) Urban Creeks Monitoring Report (UCMR) – The East County Permittees shall report monitoring, assessment results, relevant to the Pyrethroids Control Program as a separate Pyrethroid Trend Monitoring section within the 2024 UCMR required under Provision C.8.h.iii. A copy of the 2024 UCMR shall also be submitted to the Central Valley Water Board. The Pyrethroid Trend Monitoring section of the 2024 UCMR, shall include an analysis of data collected in East County Permittees receiving waters for pesticides and toxicity from 2019 through 2024 to assess the following:
 - (a) Whether discharges from MS4s are exceeding the acute and chronic pyrethroid triggers set forth in the Amendment to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges (Resolution No. R5-2017-0057);
 - (b) Whether pyrethroid pesticides are causing or contributing to exceedances of the narrative water quality objective for toxicity in surface waters or bed sediments.
 - (c) The effectiveness of management practices that are implemented to reduce pyrethroid levels in discharges;
 - (d) Whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives.

C.20. Cost Reporting

C.20.a. Task Description – Each Permittee shall annually prepare and submit a fiscal analysis of the capital and operation and maintenance costs incurred to comply with this Order’s requirements listed in Provision C.20.b.(iii).

C.20.b. Implementation Level

- i. The Permittees shall develop a cost reporting framework and methodology to perform the fiscal analysis. Permittees are encouraged to collaboratively develop the framework and methodology for purposes of efficiency, cost-savings, and regionwide consistency and comparability. The framework shall consider identification of costs incurred solely to comply with this Order’s requirements as listed in Provision C.20.b.(iii) as compared to costs shared with other programs or regulatory requirements, provide meaningful data to assess costs of different program areas, and allow for comparisons and to identify trends over time.
- ii. The analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds, and identify any funding resources shared on a regional or countywide basis. The analysis shall include the costs incurred to comply with this Permit, and an estimate of costs for the upcoming Permit year.
- iii. The analysis shall include the following program areas, specifically as required under this Order:
 - (1) Program management
 - (2) Municipal operations
 - (3) New development and redevelopment
 - (4) Industrial and commercial site controls
 - (5) Illicit discharge detection and elimination
 - (6) Construction site controls
 - (7) Public information and outreach
 - (8) Water quality monitoring
 - (9) Pesticides toxicity control
 - (10) Trash load reduction
 - (11) Mercury controls
 - (12) PCBs controls

(13)Copper controls

(14)Bacteria controls

(15)Discharges associated with unsheltered homeless populations

(16)Asset management plan development and implementation

iv. The costs reported for each program area shall address the following categories:

(1) Total cost

(2) Capital expenditures

(3) Land costs

(4) Personnel costs

(5) Consultant costs

(6) Overhead costs

(7) Construction costs

(8) Operation and maintenance costs

(9) Other costs

C.20.c. Reporting

- i.** The Permittees shall submit the cost reporting framework and methodology, acceptable to the Regional Water Board Executive Officer, by June 30, 2023.
- ii.** The Permittees shall submit their fiscal analyses annually according to the accepted cost reporting framework and methodology starting with the 2025 Annual Report.

C.21. Asset Management

C.21.a. Task Description – Each Permittee shall develop and implement an Asset Management Plan in order to ensure the satisfactory condition of all hard assets⁶⁷ constructed during this and Previous Permit terms pursuant to Provisions C.2 Municipal Operations, C.3 New Development and Redevelopment, C.10 Trash Load Reduction, C.11 Mercury Controls, C.12 PCBs Controls, C.13 Copper Controls, C.14 Bacteria Controls for Impaired Water Bodies, C.17 Discharges Associated with Unsheltered Homeless Populations, C.18 San Mateo County Sediment Controls, and C.19 Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements.

C.21.b. Implementation Level – Each Permittee shall:

- i. Develop an Asset Management Plan by June 30, 2025, which, at a minimum, shall include the following:
 - (1) A description of the asset categories to be included.
 - (2) An inventory (or link to such an inventory) of Permittees' existing hard assets built pursuant to the Provisions cited in Provision C.21.a, including at a minimum all LID/GSI systems and trash capture devices.
 - (3) An Operation, Maintenance, Rehabilitation, and Replacement Plan (Asset Management O&M Plan), to evaluate data obtained through asset assessment in order to inform a strategy for prioritizing and scheduling maintenance, rehabilitation, and replacement of inventoried assets, including:
 - (a) A process for prioritizing and scheduling operation and maintenance activities.
 - (b) A process(es) for evaluating the current condition, and identifying the need for and carrying out, as appropriate, the rehabilitation and replacement of inventoried assets. The process(es) shall account for:
 - (i) The minimum condition necessary to achieve minimum performance level(s) for each type of hard asset, including an assessment of stormwater volume and pollutant load reduction, necessary to comply with applicable Permit Provisions and TMDLs.

⁶⁷ Hard assets are structural controls that serve a water quality function, for example: bioretention cells, pervious pavement systems, full trash capture devices, trash receptacles, and pet waste stations.

- (ii) Current performance level and effectiveness, as indicated by condition. Permittees may implement a risk-based condition assessment, or comparable assessment method, to cost-effectively and -efficiently assess condition. Permittees shall base the effectiveness evaluation on, at a minimum, factors such as design, capacity, and condition and function relative to the asset's design, intended operating conditions, and intended function.
 - (iii) Consequence of failure and likelihood of failure.
 - (c) An evaluation or forecast of costs necessary for the implementation of (a)-(b) above, at least through the end of the current permit term. On an ongoing basis, the Permittees shall compare these projections with available funding sources to determine the best manner in which to fund the operation, maintenance, rehabilitation, and replacement of inventoried assets. This evaluation or forecasting may supplement Permittees' compliance with Provision C.20 Cost Reporting.
- (4) Recommendations for a reporting strategy, which may have a nexus with the tracking systems referenced in Permittees' Green Infrastructure Plans, to include:
 - (a) Municipality-specific reporting;
 - (b) Assessment of the programmatic benefit from countywide or regional roll-up of collected information.
- ii. Begin implementation of the Asset Management Plan no later than July 1, 2025.
- iii. Reassess and update their Asset Management Plan on an as-needed basis, to address changing conditions and resources.
- iv. Provide the latest version of the Asset Management Plan to Water Board staff during inspections and audits, or otherwise upon request.
- v. Complete a Climate Change Adaptation Report to identify potential climate change-related threats to assets and appropriate adaptation strategies. The report shall assess existing, new, and increasing threats from climate change to the condition of Permittees' inventoried hard assets over the next 50 years, and identify approaches that Permittees may implement to address those threats, such as the modification of design standards and countywide technical guidance documents. The Climate Change Adaptation Report may be developed on an all-Permittee (regional) scale or countywide scale.

C.21.c. Reporting

- i. The Permittees shall submit their Asset Management Plans with the 2025 Annual Reports.
- ii. The Permittees shall report on the implementation of their Asset Management Plans annually, starting with the 2026 Annual Reports, as follows:
 - (1) Provide (or link to) an inventory of all assets accounted for in the Asset Management Plan.
 - (a) Different categories of assets (e.g., trash controls, LID/GSI controls, bacteria controls) may be maintained in separate inventories.
 - (2) At a minimum, for each asset in the inventory, provide the following: category or type of water quality control; relevant design information; tributary drainage area; location; condition based on periodic inspections either by municipal or contracted staff; and operation and maintenance need (for example, while most assets may require normal operation & maintenance, Permittees may identify a subset of assets in need of rehabilitation or replacement).

This information does not have to be submitted in tabular format in the Annual Report; it may be provided externally, at the linked location identified in Provision C.21.c.ii.(1) above.
- iii. The Permittees shall submit the Climate Change Adaptation Report described in Provision C.21.b.v with their 2026 Annual Reports. The Permittees may submit the Climate Change Adaptation Report(s) on an all-Permittee (regional) scale or countywide scale.

C.22. Annual Reports

- C.22.a.** The Permittees shall submit Annual Reports electronically, including a verified electronic signature (e.g., Adobe e-signature, DocuSign, or equivalent), in all cases by September 30 of each year, in the manner specified by the Water Board. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.21, with the exception of the 2022 annual reporting requirements for Provisions C.2 – C.9, which are set forth in Provisions C.2 - C.9 of the previous Permit, Order No. R2-2015-0049, as amended. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.
- C.22.b.** The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by March 1, 2023. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by March 1 of each year for the following Annual Report, to more accurately reflect the reporting requirements of Provisions C.1 – C.21, with the agreement of the Permittees and by the approval of the Executive Officer.
- C.22.c.** The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit, in the cover letter of the Annual Report, the reason for its failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.23. Modifications to this Order

The Water Board may modify or reopen this Order, or alternatively, revoke or reissue it, before the expiration date in any of the following circumstances or as authorized by law:

- C.23.a.** To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;
- C.23.b.** To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plans for the San Francisco Bay and the Sacramento and San Joaquin River Basins approved by the State Water Board;
- C.23.c.** To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) or other applicable provision of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order;
- C.23.d.** To provide an alternative compliance program for exchanges of impervious surface treatment credits in Provision C.3.e.i; or
- C.23.e.** To incorporate applicable requirements from the Central Valley Regional Water Board's Phase 1 Delta Mercury Control Program Review under the Basin Plan for the Sacramento and San Joaquin River Basin.

C.24. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

C.25. Expiration Date

This Order expires on June 30, 2027, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

C.26. Rescission of Old Order

Order No. R2-2015-0049, as amended by Order No. R2-2019-0004, is hereby rescinded, except for enforcement purposes, on the effective date of this Order, which shall be July 1, 2022, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

C.27. Effective Date

The Effective Date of this Order and Permit shall be July 1, 2022, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

I, Thomas Mumley, Interim Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 11, 2022.

A handwritten signature in black ink, appearing to read 'T. Mumley', is written over a horizontal line.

Thomas Mumley
Interim Executive Officer

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BAMSC	Bay Area Municipal Stormwater Collaborative
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFW	California Department of Fish and Wildlife
CEDEN	California Environmental Data Exchange Network
Central Valley Water Board	California Regional Water Quality Control Board, Central Valley Region
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CSCI	California Stream Condition Index
CWA	Federal Clean Water Act
CWC or Water Code	California Water Code
DCIA	Directly Connected Impervious Area
DDCP	Direct Discharge Control Plan
DPR	California Department of Pesticide Regulation

East County Permittees or East Contra Costa Permittees	The cities of Antioch, Brentwood, and Oakley, and portions of Unincorporated Contra Costa County and the Contra Costa County Flood Control and Water Conservation District that are in the Central Valley Water Board's region
ERP	Enforcement Response Plan
FR	Federal Register
FSURMP	Fairfield-Suisun Urban Runoff Management Program
GI or GSI	Green Stormwater Infrastructure
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
ISWEBE	Inland Surface Waters, Enclosed Bays, and Estuaries Plan
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable
MRP	Municipal Stormwater Regional Permit (see Glossary for MRP 1, MRP 2, MRP 3)
MSDS	Material Safety Data Sheet
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
NAFSMA	National Association of Flood & Stormwater Management Agencies
NAICS	North American Industry Classification System
NGO	Non-governmental Organization
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System

NRDC	Natural Resources Defense Council
Ocean Plan	California Water Quality Control Plan for Ocean Waters of California
OFEE	Oil Filled Electrical Equipment
O&M	Operation and Maintenance
PAHs	Polynuclear Aromatic Hydrocarbons
PBDE	Polybrominated Diphenyl Ether
PCA	Pest Control Advisor
PCBs	Polychlorinated Biphenyls
PHAB	Physical Habitat (e.g., of streams)
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RAA	Reasonable Assurance Analysis
RCRA	Federal Resource Conservation and Recovery Act
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program
ROW	Right of Way
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Federal Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SIC	Standard Industrial Classification
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SSA	Solano Stormwater Alliance
SSID	Stressor Source Identification

SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
State Water Board	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Federal Toxic Substances Control Act
TST	Test of Significant Toxicity
TU	Toxicity Units
UCMR	Urban Creeks Monitoring Report
U.S. EPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations
WQBEL	Water Quality Based Effluent Limitation
WQS	Water Quality Standards

GLOSSARY

Actual Discharge	Observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4.
Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the State protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Base Course	A layer of constructed material (typically aggregate base – a construction aggregate typically composed of crushed rock or of recycled asphalt or concrete, capable of passing through a sieve with a certain pore diameter) located above the subbase course and/or subgrade course, and below the surface layer (which consists of a wearing course, and sometimes an extra binder course), applied to serve one or more functions, such as supporting the surface layer and distributing load.
Bituminous Surface Treatment	<p>A thin protective wearing surface, which can provide, among other services, a waterproof layer to protect underlying pavement and a filler for existing cracks or raveled surfaces. This includes, but is not limited to:</p> <ul style="list-style-type: none"> • Chip seal – a single layer of asphalt emulsion binder that is covered by embedded aggregate; • Slurry seal – a thick, cold mix paving treatment that contains aggregates, asphalt emulsion, binder and fines, water, and additives; and • Seal coat – an emulsion containing liquid asphalt and/or coal tar, mineral fillers and other anti-oxidation additives and admixtures. • Cape seal – a chip seal covered with a slurry or micro-surface, applied to existing pavements. Micro-surfacing is a polymer-modified cold-mix paving system that begins as a mixture of dense-graded aggregate, asphalt emulsion, water and mineral fillers.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.

Construction Site	Any project, including projects requiring coverage under the Construction General Permit, that involves soil-disturbing activities including, but not limited to, grubbing, clearing, grading, paving, disturbances to ground such as stockpiling, leveling, fill, and excavation. Construction sites include all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit. Construction sites are considered active until site surfaces are permanently stabilized to control erosion and other polluted stormwater discharges effectively.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this Permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of WQS because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff, or a non-stormwater discharge.
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size.
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.
Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Floor Area Ratio	The ratio of the total floor area on all floors of all buildings at a project site (except structures or floors dedicated to parking) to the total project site area.

<p>Full Trash Capture Device</p>	<p>A Full Capture Device or System is a treatment control, or series of treatment controls, including, but not limited to, a multi-benefit project (as defined in the Trash Amendments) or a low-impact development control that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain.</p>
<p>General Permits</p>	<p>Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; `Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).</p>
<p>Grading</p>	<p>The cutting and/or filling of the land surface to a slope or elevation.</p>
<p>Green Infrastructure</p>	<p>Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.</p>
<p>Gross Density</p>	<p>The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.</p>
<p>Hydrologic source control measures</p>	<p>Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.</p>
<p>Hydromodification</p>	<p>The modification of a stream’s hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.</p>
<p>Illicit Discharge</p>	<p>Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, State, or federal statutes, ordinances, codes, or regulations. The term <i>illicit discharge</i> includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Executive Officer.</p>

<p>Impervious Surface</p>	<p>A surface covering or pavement of a developed parcel of land that prevents the land’s natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.</p>
<p>Industrial Development</p>	<p>Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.</p>
<p>Infill Site</p>	<p>A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.</p>
<p>Infiltration Device</p>	<p>Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes french drains).</p>
<p>Integrated Pest Management⁶⁸</p>	<p>An ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines (and when it has been concluded that the use of non-chemical controls is insufficient), and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment (DPR, 2018).</p>

⁶⁸ Roadmap for Integrated Pest Management, CDPR 2018, https://www.cdpr.ca.gov/docs/pestmgt/ipm_roadmap.pdf

<p>Integrated Pest Management, Biological Controls</p>	<p>Biological controls are the beneficial action of predators, parasites, pathogens, and competitors to control pests and pest damage. These controls rely on predation, parasitism, herbivory, or other natural mechanisms, but typically require active human intervention, such as releasing ladybugs.</p>
<p>Integrated Pest Management, Least Hazardous Chemical Controls</p>	<p>Chemical controls involve targeted application of traditional chemical pesticides, as well as alternative products, such as oils and soaps.</p>
<p>Integrated Pest Management, Cultural Controls</p>	<p>Cultural controls reduce pest establishment, reproduction, dispersal, and survival. Examples include scheduling planting, irrigation, and fertilization; soil solarization; and planting native vegetation and xeriscape to reduce water, pesticide, and fertilizer needs. Changing irrigation practices can reduce pest problems, since too much water can increase root disease and weeds.</p>
<p>Integrated Pest Management, Mechanical and Physical Controls</p>	<p>Mechanical and physical controls kill pests directly, exclude pests, or make the environment unsuitable for pests. Physical controls may involve manual removal of pests or mowing. Barriers (screens, mesh, caulk and other sealants) are physical controls that keep pests out of buildings and structures, and may be used to enclose sensitive plants. Mulch is a physical control that inhibits weed growth. Rodent traps are mechanical controls.</p>
<p>Integrated Pest Management, Pest Action Threshold</p>	<p>The point at which pest populations or environmental conditions indicate that one or more pest control actions must be taken. Sighting a single pest does not always mean control is needed. The level at which pests will either become an economic or health threat is critical to guide appropriate, least toxic pest control decisions.</p>
<p>Joint Stormwater Treatment Facility</p>	<p>A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.</p>
<p>Local Roads</p>	<p>Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.</p>
<p>Maximum Extent Practicable (MEP)</p>	<p>A standard for implementation of stormwater management actions to reduce pollutants in stormwater. CWA 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants.” Also see State Water Board Order WQ 2000-11.</p>

Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
MRP 1	Order No. R2-2009-0074, as amended by Order No. R2-2011-0083.
MRP 2 or Previous Permit	Order No. R2-2015-0049, as amended by Order No. R2-2019-0004.
MRP 3, Permit, or Order	Order No. R2-2022-0018.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law...including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in 40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; and/or (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA sections 307, 402, 318, and 405.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, or other date as specified, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.

Pervious Pavement	A pavement system consisting of permeable interlocking concrete pavement (PICP), pervious or permeable concrete unit pavers, pervious grid pavements, pervious concrete, porous asphalt, turf block, grasscrete, and bricks and stones, set on a gravel base with gravel joints, which stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and PAHs; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Potential Discharge	Conditions with the potential to result in unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4. These include, but are not limited to, housekeeping issues, inadequate waste or materials management, evidence of actual discharges that are not ongoing, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.

Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by the San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).
Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMPs	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain WQS. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet WQS even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.

<p>Toxicity Identification Evaluation (TIE)</p>	<p>TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.</p>
<p>Trash and Litter</p>	<p>Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.</p>
<p>Treatment</p>	<p>Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.</p>
<p>Waste Load Allocations (WLAs)</p>	<p>A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.</p>
<p>Water Quality Control Plan (Basin Plan)</p>	<p>The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required.</p>
<p>Water Quality Objectives</p>	<p>The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.</p>
<p>Water Quality Standards</p>	<p>State-adopted and U.S. EPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the WQS that must be met to protect designated uses. Water quality standards also include the federal and State anti-degradation policy.</p>
<p>Water Year</p>	<p>The Water Year spans twelve months and begins on October 1 of each year. It is designated by the calendar year in which it ends. For example, the 2023 Water Year starts on October 1, 2022, and ends on September 30, 2023.</p>

Wedge Grinding	The process of milling the asphalt areas directly adjacent to concrete curbs, gutter pans and metal structures (e.g., manhole covers) to a specified width and depth. To tie into the elevations of the existing concrete and metal structures, asphalt is removed along the perimeter to allow proper depth of asphalt on the edge and to preserve the appropriate drainage patterns on the asphalt surface.
Wet Season	October 1 of a given year through April 30 of the following year.

ATTACHMENT A

MUNICIPAL REGIONAL STORMWATER PERMIT FACT SHEET

**FACT SHEET/RATIONALE
TECHNICAL REPORT**

for

ORDER NO. R2-2022-0018**NPDES Permit No. CAS612008****Municipal Regional Stormwater NPDES Permit
and
Waste Discharge Requirements**

for

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood and Sea Level Rise Resiliency District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield, Suisun City, and Vallejo, and the Vallejo Sanitation & Flood Control District which have joined together to form the Solano Stormwater Alliance (Solano Permittees)

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I. CONTACT INFORMATION

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II. PERMIT GOALS AND PUBLIC PROCESS

A. Goals

The Goals for the Municipal Regional Stormwater Permit (hereinafter, the Permit) include:

- (1) Continue regulating six Phase I municipal stormwater NPDES permits in one consistent permit that is regional in scope.
- (2) Include concrete, rigorous, and enforceable requirements building on the expertise gained during the previous permit cycle. Continue requiring (A) stormwater management actions, (B) a specific level of implementation for each action or set of actions, and (C) reporting and effectiveness evaluation requirements for each action sufficient to determine compliance.
- (3) Incorporate the Stormwater Management Plan level of detail and specificity into the Permit. Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits, but have not received the level of public review in the adoption process necessary relative to their importance in adequate stormwater pollutant management implementation.
- (4) Implement and enhance actions to control federal Clean Water Act (CWA) section 303(d)-listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
- (5) Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d)-listed pollutants.

B. Public Process

Water Board staff conducted stakeholder meetings with the Permittees and other interested parties to develop this Permit. These meetings included Water Board staff, representatives of the Permittees, the U.S. Environmental Protection Agency (U.S. EPA), and representatives of environmental groups.

C. Implementation

It is the Water Board's intent that this Permit shall ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. This Permit requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to

occur that create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Water Board is requiring that these standard requirements be addressed through the implementation of technically and economically feasible control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in CWA section 402(p). In addition, this Permit contains water quality-based effluent limitations to implement TMDLs. Compliance with the Discharge Prohibitions, Receiving Water Limitations, and Provisions of this Permit is considered compliance with the requirements of this Permit. If these measures, in combination with controls on other point and nonpoint sources of pollutants, do not result in attainment of applicable water quality objectives, the Water Board may invoke Provision C.1. and C.18 to impose additional conditions that require implementation of additional control measures.

Each of the Permittees is individually responsible for adoption and enforcement of ordinances and policies, for implementation of assigned control measures or best management practices (BMPs) needed to prevent or reduce pollutants in stormwater, and for providing funds for the capital, operation, and maintenance expenditures necessary to implement such control measures/BMPs within its jurisdiction. Each Permittee is also responsible for its share of the costs of the area-wide component of the countywide program to which the Permittee belongs. Enforcement actions concerning non-compliance with the Permit will be pursued against individual Permittee(s) responsible for specific violations of the Permit.

III. BACKGROUND

A. Early Permitting Approach

The CWA was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the pending federal NPDES regulations that would implement the amendment), the Water Board issued municipal stormwater Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo and Contra Costa counties, rather than to individual cities over 100,000 population threshold. The cities chose to collaborate in countywide groups, pool resources and expertise, and share information, public outreach, and monitoring costs, among other tasks.

During the early permitting cycles, the county-wide programs developed many of the implementation specifics that were set forth in their Stormwater Pollution Prevention Management Plans (Plans). The permit orders were relatively simple documents that referred to the Plans for implementation details. Often specific

aspects of permit and Plan implementation evolved during the five-year permit cycle without significant public review and comment.

B. Merging Permit Requirements and Specific Requirements Previously Contained in Stormwater Management Plans

U.S. EPA stormwater rules for Phase I stormwater permits envisioned a process in which municipal stormwater management programs contained the detailed BMP and specific level of implementation information, and are reviewed and approved by the permitting agency before the municipal NPDES stormwater permits are adopted. The previous permits established a definition of a stormwater management program and required each Permittee to submit an urban runoff management plan and annual work plans for implementing its stormwater management program. An advantage to this approach was that it provided flexibility for Permittees to tailor their stormwater management programs to reflect local priorities and needs. However, Water Board staff found it difficult to determine Permittees' compliance with the permits, due to the lack of specific requirements and measurable outcomes of some required actions in the plans.

Moreover, these stormwater management plans and amendments thereto made by the Permittees were not subject to public input, contrary to the U.S. Ninth Circuit Court's decision in the Phase II stormwater context that public participation is required for a stormwater management plan, because the substantive information about how an operator will reduce pollutants to the maximum extent possible was found in the stormwater management plan rather than the permit itself (*Environmental Defense Center v. EPA* (9th Cir. 2003) 344 F.3d 832, 857.).

This Permit continues to modify these previous approaches by establishing the stormwater management program requirements and defining up front, as part of the permit development process, the minimum acceptable elements of the municipal stormwater management program. The advantages of this approach are that it satisfies the public involvement requirements of both the CWA and the California Water Code (CWC). An advantage for Permittees and the public is that the permit requirements are known at the time of permit issuance and not determined later through an iterative review and approval of stormwater management plan amendments, during which time was spent more on getting an acceptable plan than on-the-ground actions. While it may still be necessary to amend the Permit prior to expiration where allowed, any need to do this should be minimized.

This Permit does not require approval of all Permittees' stormwater management programs or annual reports as part of the administration of the Permit. To do so would require significantly increased staff resources. Instead, minimum measures have been established to simplify compliance determinations for the Water Board and make Permittees' performance more transparent to the public. Each Permit provision and its reporting requirements are written with transparency and

(comparative) administrative efficiency in mind. That is, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each Permittee's compliance through annual report review and the audit process.

The challenge in drafting the Permit is to set the rigorous enforceable baseline described above, while still allowing flexibility to numerous Permittees with a range of sizes and resources. To achieve this, the Permit frequently prescribes minimum measurable outcomes, while allowing Permittees to tailor the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Permit. A balance between flexibility and enforceability has been crafted into the Permit.

C. Current Permit Approach

This Permit specifies the following: 1) requirements to effectively prohibit non-stormwater discharges into the storm drain system, pursuant to CWA § 402(p)(3)(B)(ii); 2) technology-based effluent limitations that require controls to reduce the discharge of pollutants to the "maximum extent practicable" (MEP)¹ pursuant to CWA § 402(p)(3)(B)(iii); and 3) water quality-based effluent limitations (WQBELs) pursuant to CWA § 402(p)(3)(B)(iii), which authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of...pollutants," for pesticides, trash, mercury, PCBs, bacteria, and sediment, in addition to technology-based effluent limitations. WQBELs for these pollutants are appropriate for control because water quality standards are not being met and these pollutants have impaired waters. The Permit includes requirements for the following components:

- Provision A. Discharge Prohibitions

¹ The CWA and its regulations have not specifically defined "MEP"; rather, it is a flexible and evolving standard. Congress established this flexible MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of stormwater pollution" (*Building Industry Ass'n of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 884.). This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits (*In re City of Irving, Texas, Municipal Storm Sewer System* (July 16, 2001) 10 E.A.D. 111 (E.P.A.)). The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of stormwater management programs in reducing pollutant loading to receiving waters. This is consistent with U.S. EPA's interpretation of stormwater management programs. As explained by U.S. EPA in its 1990 rulemaking, "EPA anticipates that storm water management programs will evolve and mature over time" (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990)).

- Provision B. Discharge Prohibitions and Receiving Water Limitations
- Provision C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations
- Provision C.2. Municipal Operations
- Provision C.3. New Development and Redevelopment
- Provision C.4. Industrial and Commercial Site Controls
- Provision C.5. Illicit Discharge Detection and Elimination
- Provision C.6. Construction Site Control
- Provision C.7. Public Information and Outreach
- Provision C.8. Water Quality Monitoring
- Provision C.9. Pesticides Toxicity Control
- Provision C.10. Trash Load Reduction
- Provision C.11. Mercury Controls
- Provision C.12. PCBs Controls
- Provision C.13. Copper Controls
- Provision C.14. Bacteria Control for Impaired Water Bodies
- Provision C.15. Exempted and Conditionally Exempted Discharges
- Provision C.16. Discharges to Areas of Special Biological Significance
- Provision C.17. Discharges Associated with Unsheltered Homeless Populations
- Provision C.18. San Mateo County Sediment Controls
- Provision C.19. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements
- Provision C.20. Cost Reporting
- Provision C.21. Asset Management
- Provision C.22. Annual Reports
- Provision C.23. Modifications to this Order
- Provision C.24. Standard Provisions

- Provision C.25. Expiration Date
- Provision C.26. Rescission of Old Order
- Provision C.27. Effective Date

IV. ECONOMIC ISSUES AND WATER CODE SECTION 13241

CWC section 13241 requires the Water Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. CWC section 13263 requires the Water Board to take into consideration the provisions of CWC section 13241 in adopting waste discharge requirements.

In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, the California Supreme Court considered whether regional water boards must comply with CWC section 13241 when issuing waste discharge requirements under CWC section 13263(a) by taking into account the costs a permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information “depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act” (*Id.* at p. 627.). The Court ruled that regional water boards may not consider the factors in CWC section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than applicable federal law requires (*Id.* at pp. 618, 626-627 [“[Water Code section 13377 specifies that...discharge permits issued by California’s regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board’s consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act.... Because CWC section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a...discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards.”])). However, when pollutant restrictions in an NPDES permit are more stringent than federal law requires, CWC section 13263 requires that the regional water boards consider the factors described in CWC section 13241 as they apply to those specific restrictions.

As discussed in Section V.C, State Mandates, the Water Board finds that the requirements in this Order are not more stringent than the minimum federal requirements. Among other requirements, federal law (CWA section 402(p)(3)(B)(ii)) requires MS4 permits to include requirements to effectively prohibit non-storm water discharges into the MS4s, in addition to requiring controls to reduce the discharge of pollutants in stormwater to the MEP, and other provisions as U.S. EPA or the State determines are appropriate for the control of pollutants in MS4 discharges. The permitting agency must therefore include provisions when it finds it is appropriate to do so and to determine what permit conditions are necessary to control pollutants in a specific geographic area.

MS4 discharges in the San Francisco Bay region are a continuing and significant source of pollutants to receiving waters, many of them impaired. As such, the Water Board finds that inclusion of all of the requirements in the Order are necessary and appropriate to control pollutants in MS4 discharges including, but not limited to, requirements for non-stormwater discharges, technology and water quality-based effluent limitations, TMDLs, receiving water limitations, and monitoring and reporting to ensure that the requirements of the Order are being met.

The requirements in this Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR 122.26 and guidance; however, the requirements have been designed to be consistent with and within the federal statutory mandates described in CWA section 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. The conditions in this Order are no more stringent than federal law (See *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.). Each of the requirements in the Order, especially when implemented together, constitute the critical means towards achieving the requirements and goals of the CWA.

Moreover, the inclusion of numeric WQBELs in this Order does not cause this Order to be more stringent than federal law (See State Water Board Order No. WQ2021-0052-EXEC, p. 72.). Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. The inclusion of WQBELs as discharge specifications in an NPDES permit in order to achieve compliance with water quality standards is not a more stringent requirement than the inclusion of BMP-based permit limitations to achieve water quality standards (*Ibid.*; State Water Board Order No. WQ 2006-0012 (Boeing)). This is supported by U.S. EPA in its guidance on incorporating TMDL WLAs for stormwater in NPDES permits, which explains that the permit's administrative record needs to demonstrate that WQBELs will achieve the WLAs, whether the WQBEL is expressed numerically or as a BMP.²

In light of the foregoing, consideration of the factors set forth in CWC section 13241 is not required for permit requirements to implement the effective prohibition on the discharge of non-stormwater discharges into the MS4 or for controls to reduce the discharge of pollutants in stormwater to the MEP, or other provisions that the Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law.

While the Water Board need not consider the CWC section 13241 factors, the Water Board nevertheless considers them below, namely the past, present, and probable future beneficial uses of water; the environmental characteristics of the

² U.S. EPA, Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,'" (Nov. 26, 2014), p. 6; U.S. EPA, Memorandum, "Establishing Total Maximum Daily Load Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs" (Nov. 22, 2002) (2002 U.S. EPA Memorandum).

hydrographic unit under consideration, including the quality of water available thereto; the water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; economic considerations; the need for developing housing within the region; and the need to develop and use recycled water.

Water Code section 13241 “does not specify how a water board must go about considering the specified factors. Nor does it require the board to make specific findings on the factors” (*City of Arcadia et al v. State Water Resources Control Board and Los Angeles Regional Water Quality Control Board* (2011) 191 Cal.App.4th 156, 177.). In *City of Duarte v. State Water Resources Control Board* (2021) 60 Cal.App.5th 258, 272, the Court of Appeal held that the “manner in which the Water Control Boards consider and comply with Water Code section 13241 is within their discretion” and that “the Water Control Boards are charged with taking into account economic considerations, not merely costs of compliance with a permit.... [E]conomic considerations also include, among other things, the costs of not addressing the problems of contaminated water” (*Id.* at p. 276.). Lastly, consideration of section 13241 does not require a “cost-benefit analysis” (See State Water Board Order WQ 2020-0038 (*In the Matter of Review of Approval of Watershed Management Programs and an Enhanced Watershed Management Program Submitted Pursuant to Los Angeles Regional Water Quality Control Board Order R4-2012-0175*) at p. 31.).

The Water Board finds that the requirements in the Order are necessary to ensure the reasonable protection of beneficial uses of waterbodies and the prevention of nuisance. None of the factors of section 13241, including costs of compliance, is sufficient to justify failing to protect those beneficial uses. Nor is it sufficient to justify omitting any requirement in the Order, as the Board finds that doing so would unreasonably affect the designated beneficial uses of the region’s waters. Additionally, it would be wholly inconsistent with federal requirements not to include the requirements in the Order, as the Board has deemed them necessary for the control of MS4 discharges. Where appropriate, the Board has provided Permittees with additional time to implement control measures to achieve final WQBELs and/or receiving water limitations and provided significant flexibility where appropriate. The Order builds on the knowledge gained from implementing the Previous Permit. In addition, the Board has provided significant flexibility for Permittees to choose how to implement the requirements of the Order, including by working with other Permittees to implement cost-effective control measures. The Order allows Permittees the flexibility to address critical water quality priorities, particularly discharges to waters subject to TMDLs, but aims to do so in a focused and cost-effective manner while maintaining the level of water quality protection mandated by the CWA.

The CWC section 13241 factors are considered as follows:

A. Past, Present, and Probable Future Uses of Water and Environmental Characteristics of the Hydrographic Unit Under Consideration

With respect to the “past, present, and probable future uses of water” and “environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto”: the beneficial uses of the region’s waters affected by MS4 storm water discharges are set forth in the Basin Plan, the Ocean Plan, and the Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) Plan, (as well as the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, applicable to the East County Permittees), which the Water Board has considered. The environmental characteristics of the waters under consideration, including water quality, have been affected by MS4 discharges of stormwater and non-stormwater, which convey myriad pollutants to surface waters, including hydrocarbons, heavy metals, pesticides, trash, mercury, PCBs, bacteria, and sediment, which have impaired waters in the regions, ultimately impacting present and probable future beneficial uses. For example, this has led to fish consumption advisories, adverse ecosystem and recreational impacts from trash and debris, and toxic conditions for aquatic life, among others. The requirements of the Order are necessary to protect and restore the past, present, and probable future beneficial uses of surface waters in the region.

B. Water Quality Conditions Reasonably Achievable

The “water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area” are not reconsidered when issuing waste discharge requirements, as water quality objectives have already been established and the purpose of permitting is to regulate a particular type of discharge or a discharge from a specific source, not all possible sources of pollutants to a receiving water. The water quality objectives implemented by the Order have already been subject to separate regulatory processes, and those water quality objectives were deemed reasonable and achievable when they were promulgated. The Water Board has found that water quality objectives can reasonably be achieved, in many cases over time in accordance with implementation schedules, such as those in TMDLs, through the coordinated control of all factors which affect water quality in the area. Achieving and maintaining water quality objectives is a coordinated effort and all regulated dischargers must contribute, including the Permittees, since MS4 discharges are a significant source of pollutants in receiving waters. The requirements in this Order are key to ensuring reasonable achievement of water quality objectives.

C. Housing Needs

With respect to the “need to develop housing within the region,” the Water Board is mindful that housing demands have not kept up with population growth in the Bay Area. An increase in population creates a higher demand for water, exacerbates usage of natural resources, and increases generation of waste and pollution. In order to conserve and protect the quantity and quality of our natural resources, development must be done systematically. To protect human health and the environment, create economic opportunities, and provide attractive and affordable neighborhoods, U.S. EPA encourages smart growth and low impact development.³ Stormwater management is an essential smart growth strategy. According to U.S. EPA, using smart growth and low impact development strategies, communities and developers can reduce runoff quantity, protect water quality, and conserve water by developing compactly, preserving ecologically critical open space, and using green infrastructure strategies.⁴

The Order helps to address the water needs associated with the need for housing by controlling the quality and quantity of MS4 discharges, and requiring some stormwater to be recycled and re-used. The low impact development requirements of the Order help to balance growth with the protection of water quality, by requiring new development to implement cost effective, lot-level strategies that replicate the natural hydrology of the site and reduce the negative impacts of development. By avoiding the installation of more costly conventional stormwater management strategies and harnessing runoff at the source, LID practices enhance the environment while providing cost savings to both developers and local governments.

The Order also incentivizes much-needed affordable housing in the Bay Area by providing regulatory flexibility for affordable housing projects in meeting low impact development requirements. The new requirements to address discharges associated with unsheltered homelessness may also encourage the development of housing, as Permittees may control discharges associated with homelessness by providing and expanding access to temporary or permanent housing.

D. Recycled Water Needs

On the “need to develop and use recycled water” factor, the Order allows Permittees, via their green infrastructure planning and alternative compliance

³ According to U.S. EPA, “[s]mart growth’ covers a range of development and conservation strategies that help protect our health and natural environment and make our communities more attractive, economically stronger, and more socially diverse.” Principles of smart growth include, but are not limited to, use of compact building design, creating a range of housing opportunities and choices, and preserving open space and critical environmental areas. United States Environmental Protection Agency. About Smart Growth. <https://www.epa.gov/smartgrowth/about-smart-growth>. Accessed on June 23, 2020.

⁴ U.S. EPA. Smart Growth and Water. <https://www.epa.gov/smartgrowth/smart-growth-and-water>

processes in Provision C.3, to support or implement multi-benefit projects that capture and use runoff. During MRP 2, the City of South San Francisco and the San Mateo Countywide Water Pollution Prevention Program developed the Orange Memorial Park design, which incorporates water capture and use and is expected to be constructed during the Permit term. Permittees, in their Green Infrastructure Plans and Stormwater Resource Plans completed during MRP 2, have identified additional opportunities for such projects, and Order Provision C.3.j allows credit for their implementation.

E. Economic Considerations

Finally, with respect to the “economic considerations” factor, the Water Board has considered cost of compliance, especially since it is a consideration in the implementation of technology controls to the MEP. In 2000, the State Water Board issued a precedential order (State Water Board Order WQ 2000-11 (*Cities of Bellflower, et al.*)) stating that cost of compliance with the programs and requirements of a municipal stormwater permit is a relevant factor in determining MEP. The Order also explicitly stated that a cost benefit analysis is not required. The State Water Board discussed costs as follows:

While the standard of MEP is not defined in the stormwater regulations or the Clean Water Act, the term has been defined in other federal rules....

These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

(State Water Board Order WQ 2000-11, *supra*, p.20; see also State Water Board Order WQ 2020-0038, *supra*, p. 31.) The cost of complying with TMDL waste load allocations is not required to be considered since TMDLs are not subject to the MEP standard. Federal law requires that NPDES permits contain effluent limitations consistent with the assumptions of any applicable wasteload allocation in a TMDL

(40 C.F.R. §122.44(d)(1)(vii)(B).). Nevertheless, for purposes of CWC section 13241, these costs are considered.

Economic discussions of urban runoff management programs focus primarily on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, the true cost of implementation of the Permittees' urban runoff management programs is difficult to ascertain because reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin.⁵ Permittees do not have a standardized approach to reporting costs, and in some cases attribute the full cost of pre-existing programs, program elements that serve purposes other than stormwater control, and grant-funded projects to the cost of complying with the stormwater permit. Below, we discuss these challenges in more detail, consider cost estimates from other regions, and provide estimates of both past and projected costs of this region's identify urban runoff management programs. In addition, we have also attempted to quantify both costs that would be incurred by not fully implementing the programs, as well as the benefits that result from program implementation.

1. Difficulties in Estimating Costs

Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, and stormwater pollution reduction approaches and costs are difficult to standardize. There are appropriate grounds for differences among municipal stormwater permits: what is practicable and prudent in one community may not work in another because of differences in population, hydrology, pollution sources, water uses, and municipal infrastructure, among other factors. In addition, Permittees have discretion in deciding how to comply with permit requirements, including requirements to implement TMDL wasteload allocations and achieve full-trash capture equivalency. Nevertheless, differences of a very wide margin are not easily explained.⁶ While Permittees may be in a better position than Water Board staff to estimate the costs of compliance, they may have incentives to over-report costs or report costs they would have incurred regardless of the permit requirements. Thus, it continues to be difficult to ascertain the cost, for planning purposes, of fully implementing decades-long stormwater and urban runoff management programs, especially where significant flexibility has been provided to the Permittees to comply, both with regard to the manner of compliance and the timeframes for achieving compliance.

⁵ LA Regional Water Board, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003. p.2

⁶ Radulescu, Dan, and Xavier Swamikannu. *Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003*. Los Angeles Regional Water Board, January 2003. p. 2. Web. June 20, 2019.

In addition, challenges in projecting costs include:

- Innovations in BMPs over time may reduce costs and/or increase pollutant removal;
- Changes in consumer products, land use, and demographics may increase, reduce or eliminate pollutants in MS4 discharges;
- Limitations of modeling used to identify appropriate BMPs to achieve required water quality outcomes, requiring water quality data for verification and periodic recalibration;
- Imprecise data at the planning stage on site-specific conditions for siting BMPs, which can significantly affect BMP sizing requirements as well as the types of BMPs that can be used at a site;
- Evolving science and evaluation of local conditions that may support site-specific water quality objectives; and
- Infrastructure age and condition, which may require significant rehabilitation or reconstruction projects to which Permit-required BMPs could be added at a reduced incremental cost relative to a standalone BMP retrofit project;⁷
- BMP implementation drivers outside the Permit, such as climate change, which may result in changes to the depth, duration, and frequency of precipitation events, as well as changes to urban temperatures and water availability; urban land use changes such as densification or multi-modal (“active”) transportation design implementation; modified urban designs to improve air quality around transportation infrastructure; or modified street tree planting designs to improve street tree health, size, and longevity, leading to green stormwater infrastructure implementation for other purposes, that coincidentally satisfies Permit requirements.

Several ongoing initiatives seek to address the challenges described above, including efforts by the State Water Board’s Office of Research, Planning, and Performance (ORPP)⁸ to provide guidance on estimating TMDL implementation costs, and a project of the Environmental Finance Center (EFC) at California State

⁷ As an example, in its 2019 stormwater fee funding initiative, the City of Alameda noted that “on average, the industry-standard life expectancy of a storm drain system is approximately 60 years. The majority of the City’s storm drainage pipes were installed more than 50 years ago, leaving the City with a system that is approaching the end of its useful life.” (City of Alameda, July 2019. *Fee Report: Water Quality and Flood Protection Fee*. p. 1). Many of the MRP Permittees own and operate MS4s that were built prior to or shortly after WWII and, as such, are systems due for significant rehabilitative or restorative maintenance. This has been one driver for MS4 master planning efforts by Permittees including the cities of Alameda (2008), Oakland (bids solicited in 2020), Palo Alto (2015 update), San Jose (2017), and Vallejo.

⁸ State Water Board, ORPP, 2019. *Guidance for Future Total Maximum Daily Load (TMDL) Municipal Storm Water Cost Estimation*, p.2.

University, Sacramento's to compile existing resources on stormwater infrastructure costs and develop best practices for estimating costs. EFC's effort is evolving from CSU Sacramento's 2005 work, presented below in part, and will include estimates of costs for permit compliance activities, technical resources that assist stormwater managers, and project costs for both green and grey stormwater infrastructure.

ORPP's guidance describes methods for obtaining information on compliance approaches and associated costs and for completing an independent analysis of costs. The guidance promotes greater consistency and transparency related to estimation of costs to implement TMDLs. ORPP notes that, even with improved guidance, precise cost estimation remains challenging and the level of precision possible may be low in many cases. For example, industry-wide, there is no uniform database of projects' components and costs to date.⁹

The Permit specifies expectations for cost reporting in Provision C.20, Cost Reporting, which is intended to improve the Board's understanding of Permittee costs to comply with the Permit. The Water Board hopes that in conjunction with ORPP's guidance and the EFC's resources, Provision C.20 will provide valuable cost information that will improve the Water Boards' consideration of economic factors in issuing future permits.

a. Differentiating Stormwater Program Costs from Other Municipal Program Costs

Reported program costs are not all attributable to compliance with MS4 permits. Many program components and associated costs predate the MS4 permitting program, while other program components serve multiple purposes, only one of which is stormwater control, or would have been implemented irrespective of a permitting requirement. Therefore, true program cost resulting from MS4 permit requirements is sometimes some fraction of reported costs.

In the San Francisco Bay Region, most costs that will be incurred to implement the Order will not be new. Urban runoff management programs have been in place in this region for over 25 years. Municipalities have funded street sweeping and trash collection for decades, so their costs are not solely or even principally attributable to MS4 permit compliance. Some municipalities' source control ordinances, such as Berkeley's 1988 ban on Styrofoam, predated the stormwater permit's source control credits. Many municipalities had creek cleanup initiatives, long before doing so was eligible for a credit under the stormwater permit. Thus, any increase in cost to the Permittees as a result of this Order's requirements will be incremental in nature. This incremental increase may be quite low. A California State University, Sacramento study found that only 38 percent of program costs are new costs fully attributable to

⁹ Radulescu, Dan, and Xavier Swamikannu. *Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003*. Los Angeles Regional Water Board, January 2003. p. 2. Web.

MS4 permits. The remainder of program costs were either preexisting or resulted from enhancement of preexisting programs.¹⁰ The County of Orange found that an even smaller percentage, 20 percent, of its total stormwater management program budget was attributable to MS4 permit compliance. The remaining 80 percent is attributable to preexisting programs.¹¹

In some cases, stormwater control is only one element of a larger project. For instance, stormwater control measures may be integrated into multi-benefit projects serving many objectives, such as green stormwater infrastructure elements of sidewalks and bike paths that also reduce the urban heat island effect and improve pedestrian and cyclist safety. Another example is the stormwater filtration pond at Northside Drive in Dublin, Alameda County, which filters runoff from upstream residential and commercial land use while serving as a significant urban park amenity. Other measures may start out as stormwater control measures only to become expected by residents for their other benefits (e.g., dog waste bags along trails or in public parks, trash receptacles at trailheads and parking areas, and restrooms or portable toilets at trailheads and in public parks). As for the costs associated with upgrading existing programs, only a fraction of the cost of a multi-benefit project should be attributed to MS4 permit implementation.

2. Current Permit Costs - Estimates from Other Regions

Despite the challenges in quantifying permit implementation costs, past efforts to identify urban runoff management program costs have produced useful information.

Studies on urban runoff management program costs and have found annual per-household costs ranging from about \$15 – 67 (2021 dollars).¹²

For example, in 1999, U.S. EPA reported on multiple studies it conducted to determine the cost of urban runoff management programs.¹³ A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be \$9.16 (\$14.58)¹⁴ per household per year. U.S. EPA also studied 35

¹⁰ State Water Board, 2005. NPDES Stormwater Cost Survey. p. 58.

¹¹ County of Orange, 2000. A NPDES Annual Progress Report. p. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

¹² Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. pp. 68791-68792.

State Water Board, 2005. NPDES Stormwater Cost Survey. p. ii

¹³ U.S. EPA, 1999. *Preliminary Data Summary of Urban Storm Water Best Management Practices*, EPA 821-R99-012. Web.

¹⁴ Figures in parentheses reflect adjustments for inflation to 2021 dollars using the U.S. Bureau of Labor Statistics' CPI Inflation Calculator: https://www.bls.gov/data/inflation_calculator.htm

Phase I municipalities, finding costs to be similar to those anticipated for Phase II municipalities, at \$9.08 (\$14.46) per household per year.¹⁵

The Los Angeles Regional Water Board also conducted a study on program cost based on costs reported in the municipalities' annual reports.¹⁶ The Los Angeles Regional Water Board estimated that average per-household cost to implement the MS4 program in Los Angeles County was \$12.50 (\$18.18) per year.

The State Water Board commissioned a study by CSU Sacramento to assess costs of the Phase I MS4 program. Annual cost per household in the study ranged from \$18 to \$46 (\$25.98 to \$66.51) with the City of Encinitas in San Diego County representing the upper end of the range.¹⁷ The higher cost of the City of Encinitas' program reflects its coastal location, reliance on tourism, consent decree with environmental groups, and overall superior program. In a separate review, the Central Coast Regional Water Board estimated that the costs imposed by its Phase I MS4 Permit for the City of Salinas (Order No. R3-2012-0005) were similar to those for Encinitas, since the Salinas permit's requirements were similar to those for Encinitas. Other MS4s assessed in the CSU Sacramento study were the cities of Corona and Santa Clarita, which were found to expend \$32 (\$46.76) and \$39 (\$40.53) per household on their stormwater programs, respectively. The range of costs for broadly similar programs in Southern California is likely representative of Permittees' costs to implement the programs.

3. Estimates of Permit Costs in the San Francisco Bay Region

Because the Permittees have not been required to report comprehensively on program implementation costs, estimates like those developed in CSU Sacramento's study are not available for the San Francisco Bay Region. Nevertheless, stormwater management fees implemented by certain Permittees provide some indication of the previous permit's implementation costs. The MRP Permittees' generally successful implementation of their urban runoff management programs for the past 25 years demonstrates that they have the resources available to implement them. We consider these costs below:

In 2019, the City of Alameda property owners approved the Water Quality and Flood Protection Initiative, which increased Alameda's existing Clean Water Program fee, originally adopted in 1992, to comply with state and federal clean

¹⁵ National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Dischargers, Final Rule. Federal Register 64 (December 8, 1999): 68791. Web.

¹⁶ Radulescu, Dan, and Xavier Swamikannu. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003. Los Angeles Regional Water Quality Control Board, January 2003. p. 2. Web.

¹⁷ State Water Board, 2005. Currier, Brian K., et al. NPDES Storm Water Cost Survey Final Report. Office of Water Programs, CS Sacramento, January 2005. pp. ii, iv

water requirements (28 percent); operate and maintain Alameda's MS4 (56 percent); and complete capital improvements to protect flooding (16 percent).¹⁸ The initiative increased Alameda's existing fee revenues to \$5.45 million per year from \$2.89 million per year, and to \$69.40 per capita from about \$36.80 per capita. While the allocation of the fee funds suggests Alameda's costs to implement Permit requirements may not be more than about \$20 per capita per year ($\69.40×28 percent). However, because costs are not clearly separated and because Alameda incurs other costs that are recovered outside of the fee (e.g., costs for plan review for Provision C.3 projects, inspection of commercial, industrial, and construction facilities pursuant to Provisions C.4 and C.6, with recovery of those costs via fees for plan review or inspection), the true program cost is greater.

In April 2017, Palo Alto property owners approved a Storm Water Management Fee of about \$164 per year for a typical single-family residence. This new fee replaced Palo Alto's then-existing Storm Drainage Fee, increasing it by about 2.3 percent. The fee was originally established in 1989 at \$39 per year per "equivalent residential unit" and was raised to \$51 per year in 1994-95, for a typical single-family residence.¹⁹ The 2017 fee was to fund: storm drain system construction projects; green stormwater infrastructure projects; commercial and residential rebate programs to encourage installation of green stormwater infrastructure; floodplain management programs; debris and litter reduction; and public and residential integrated pest management activities. Palo Alto noted that the funding necessary to support "a minimum level of storm drainage service" would cost approximately \$3.5 million per year, consisting of \$2.5 million in baseline staff and expenses, and \$1 million in annual debt service for past storm drain capital project revenue bonds, or about \$52.60 per capita.²⁰

Both fee increases provide a Bay Area estimate of current program costs and indicate the challenges of determining stormwater program-specific costs. While the fees include costs to comply with Permit, they also include other costs associated with MS4 construction, operation, and maintenance, which are not required by the Permit. At the same time, the fees do not cover all costs to implement the Permit. For example, the cities incur costs under Provision C.3 associated with plan review and approval, inspection of urban runoff treatment, and in some cases hydromodification control systems. In addition, they may incur costs for Permit-required inspections of construction sites and commercial and industrial businesses, and actions to address illicit discharges pursuant to Provisions C.4, C.5, and C.6. These costs are recovered through other fees, e.g., for plan review, permitting, and inspections, and business licenses. Permit-required work such as commercial and

¹⁸ City of Alameda, 2019. *City of Alameda Water Quality & Flood Protection Initiative Official Ballot Information Guide*. Web. July 22, 2021.

¹⁹ https://www.paloaltoonline.com/weekly/morgue/cover/2000_Sep_13.SIDEBAR.html

²⁰ City of Palo Alto, Sept. 22, 2015. *Finance Committee Staff Report: Storm Drainage Fee Renewal*. p.7.

industrial business inspections may be combined with inspections for purposes not required by the Permit, such as hazardous materials inspections completed by the local Certified Unified Program Agency (CUPA).

Similarly, Permittees may use General Fund revenues for purposes such as capital improvement projects, which could include provision of matching funds for grant-funded green stormwater infrastructure projects. The City of East Palo Alto experienced budget surpluses of up to \$17.2 million per year from 2011 to 2019, and in 2019 transferred a portion of the surplus to provide cost match for grant-funded water infrastructure projects. Other cities experiencing surpluses in 2019 included Palo Alto (\$76 million) and Mountain View (\$118 million).²¹ These expenditures may not be reflected in storm water fees.

Palo Alto's and Alameda's fees are similar to the reported costs for other municipalities to implement broadly similar MS4 permits. Given the significant limits noted herein, the Water Board concludes that the discussion describes costs that are generally representative of costs to implement the Previous Permit.

4. Program Costs

Below, we consider in greater detail the costs associated with compliance with the renewed Permit.

This economic analysis combines cost estimates at a macro level (e.g., per capita costs based on typical implementation costs compiled from multiple sources) and, where possible, estimated costs for Permittees to comply with specific Permit provisions.

For estimates of the projected costs to comply with the Permit, Water Board staff sought examples from published sources and experts, including:

- Permittees' stormwater program managers and staff
- Stormwater program managers around the State
- Stormwater staff at the Regional and State Water Boards
- Grant funding applications (e.g., Props. 1 and 84) and reports submitted to the State Water Board's Division of Financial Assistance (e.g., Storm Water Resource Plans)
- Information on projects implemented cooperatively with the California Department of Transportation (Caltrans)

²¹ East Palo Alto Daily Post, Feb. 5, 2020. *East Palo Alto Posts a \$15.6 million surplus*. Web. July 25, 2021.

- Total Maximum Daily Loads adopted by the Water Board and other Regional Water Boards
- Economic analyses conducted for other Regional and State Water Board orders and amendments to Water Quality Control Plans (e.g., the Trash Amendments)
- Available peer-reviewed and gray literature on the implementation of measures similar to those that are reasonably foreseeable under the Permit (e.g., reports on green stormwater infrastructure implementation for Philadelphia's Green City, Clean Waters program and others; collected cost information available at the International Stormwater BMP Database; and published reports and articles from the American Society of Civil Engineers and the Water Environment Federation)

Possible errors in cost estimates can result from extrapolating costs from other jurisdictions to the Permittees' on a per capita or per area basis because of differences in regional economies, population density, and other factors. A more accurate estimation of costs would seek to normalize cost factors before extrapolating in this manner. However, as discussed herein, because of limitations in the available data and uncertainties regarding Permittees' methods of compliance with the Permit, further effort to refine the estimates provided here would not necessarily improve them.

The Permittees' determination of a method of compliance will also affect cost. Permittees can choose to implement the least expensive measures that are effective in meeting the Permit requirements. The Permit also does not require Permittees to fully implement all requirements within a single permit term. Where appropriate, the Water Board has provided Permittees with additional time to implement control measures to achieve water quality objectives. In addition, changes to the Permit are typically incremental in nature, expanding upon or better defining existing programs or requirements. Estimates of new program costs can be inflated if they reflect the unit costs for grant-funded projects, often pilots being completed for the first time, that include measures that would be excluded if they were not being subsidized by grant funding.

The Permit generally maintains existing requirements, such that many MS4 program costs are continuing costs that may be well represented by the discussion above. At the same time the Permit's continuing requirements may result in additional implementation actions, which can result in new costs. In addition, the Permit includes new or revised expectations as described below, which may result in program costs not captured by the above analysis.

a. Continuing Requirements

Provisions for which requirements are substantially continuing, or continuing in a manner likely to result in similar costs to Permittees as under MRP 2, include:

- C.1 – Compliance with discharge prohibitions
- C.2 – Municipal operations
- C.4 – Industrial and commercial site controls
- C.5 – Illicit discharge detection and elimination
- C.6 – Construction site control
- C.7 – Public information and outreach
- C.9 – Pesticides toxicity control
- C.13 – Copper controls
- C.14.b – City of Pacifica and San Mateo County bacteria controls
- C.15 – Exempted and conditionally exempted discharges
- C.16 – Discharges to areas of special biological significance
- C.19 – East Contra Costa County Permittees

Provision C.5 includes a continuing requirement that Permittees maintain their MS4 maps, along with a requirement to develop a plan and schedule to update their existing maps. Permittees are likely to incur modest costs to develop this plan and schedule. Those permittees who have recently updated maps are likely to incur lower costs.

In addition, while Provision C.8, Monitoring, incorporates certain revised monitoring expectations, they are expected to result in costs similar to those incurred by the Permittees during MRP 2, including for monitoring conducted pursuant to Provision C.10, which has been moved into Provision C.8. That is because while some monitoring has been maintained (e.g., pesticides and pollutants of concern monitoring) or added (e.g., green stormwater infrastructure monitoring), other monitoring expectations were removed (e.g., creek status monitoring) and replaced with monitoring that is expected, overall, to have similar total costs. In addition, the provision incorporates flexibility to allow Permittees to complete monitoring efforts collectively and/or collaboratively, or in coordination with other efforts, such as the San Francisco Bay Regional Monitoring Program. All monitoring requirements are relevant and necessary to demonstrate compliance with permit requirements and to answer or to inform answer to critical specified management questions related to pollutant source identification, effectiveness of pollutant controls and management practices and actions, and attainment of water quality objectives in receiving waters. The monitoring requirements reflect a balance between minimizing monitoring costs and ensuring monitoring is scientifically sound and sufficient to provide usable

results. Any increased costs associated with new or revised monitoring requirements are modest compared to the costs of implementation of pollutant controls and management practices and actions, and the benefit of better-informed basis for cost-effective pollutant controls and management practices and actions, which will cost hundreds of millions of dollars over time, far outweigh any additional monitoring costs. In addition, reduced or inadequate monitoring efforts that do not produce usable results is a consequential waste of resources.

Further, trash monitoring requirements have been moved to Provision C.8 from Provision C.10. While they have been updated to reflect next steps based on work the Permittees completed during MRP 2, they are expected to involve a similar level of effort and cost.

Provision C.15 includes a continuing requirement to implement appropriate BMPs for non-stormwater discharges, including emergency firefighting discharges. This includes a requirement to convene a workgroup to update practices for emergency firefighting discharges and to implement training on the updated practices once during the permit term. This may result in costs to attend workgroup meetings, prepare updated BMPs and outreach materials, and train affected municipal staff.

Provision C.19 incorporates changes reflecting that subject East Contra Costa County Permittees, who were added to MRP 2 during the MRP 2 permit term, were granted time during MRP 2 to come up to speed with requirements of other Order provisions. Those Permittees are thus expected to be affected similarly to the other Permittees with respect to costs, as described elsewhere in this analysis. In addition, Provision C.19 incorporates requirements to achieve applicable wasteload allocations for mercury, in part by completing a study on Marsh Creek. However, those costs are roughly offset by reduced costs associated with work completed during MRP 2 that is now no longer required.

b. Continuing Requirements with additional costs

The Permit includes a number of provisions with requirements that may increase program costs. In many cases, these costs may be offset in whole or in part through collection of additional fees (e.g., for plan review and inspections), grant funding, completion of cooperative projects with other entities (e.g., Caltrans), or other sources.

The Permit would require additional costs as compared to MRP 2 to implement updated requirements for the following Provisions:

- C.3 – New and Redevelopment
- C.10 – Trash Control

- C.11 – Mercury Control and
- C.12 – PCBs Control

For Provisions C.3, C.10, C.11, and C.12, substantial portions of the Provisions' expectations are continuing requirements and expected to have costs similar to MRP 2. They also incorporate updated requirements, and the costs to implement those updated requirements are likely to be dominated by costs for green stormwater infrastructure implementation and implementation of full trash capture devices or measures equivalent to full trash capture, as described below. That is in part because building projects on the ground is more expensive than implementing municipal planning processes to require others to do so, to evaluate contaminated sites for referral to other agencies for cleanup, etc.

Green stormwater infrastructure implementation costs have a substantial potential range, depending on factors including project type, size, location, and constraints. In general, larger district- or regional-scale projects may have lower unit costs (i.e., costs per acre of impervious surface treated, or per unit of pollutants reduced) than smaller green street or parcel-scale projects.²² In their Green Infrastructure planning processes and in comments on the Order's Administrative Draft, Permittees expressed the expectation that they would seek to implement a cost-efficient combination of measures sufficient to address Order requirements. Thus, it is likely that Permittees will choose to implement a combination of projects that is below the highest-cost analysis considered here.

To the extent these provisions contain updated measures that would impose additional costs on Permittees to implement, it is likely that those additional costs are within the range of implementation costs for green stormwater infrastructure and trash capture.

c. Continuing provisions with updated requirements

The Order includes post-construction stormwater requirements, including requirements to reduce discharges of mercury and PCBs, which green stormwater infrastructure will help achieve. Low impact development (LID), as a mode of implementing post-construction requirements, has been shown to be cost-effective and compares favorably to conventional stormwater management. "As LID was [originally] developed by a local government, it is sensitive to addressing local government's unique environmental and regulatory needs in the most economical manner possible by reducing costs associated with stormwater infrastructure design, construction, maintenance, and enforcement. LID also provides for local governments' need for economic vitality through reasonable and continued growth and redevelopment. LID allows for greater development potential with less environmental impact using smarter designs and

²² WEF, Dec. 2, 2015. *Spotlight: The Real Cost of Green Infrastructure*.

advanced technologies to achieve a better balance between conservation, growth, ecosystem protection, and public health/quality of life.”²³

Traditional approaches to stormwater management involve conveying runoff off-site to receiving waters, to a combined sewer system, or to a regional facility that treats runoff from multiple sites. These designs typically include hard infrastructure, such as curbs, gutters, and piping. LID-based designs, in contrast, are designed to use natural drainage features or engineered swales and vegetated contours for runoff conveyance and treatment. In terms of costs, LID techniques like conservation design can reduce the amount of materials needed for paving roads and driveways and for installing curbs and gutters. Conservation designs can be used to reduce the total amount of impervious surface, which results in reduced road and driveway lengths and reduced cost. Other LID techniques, such as grassed swales, can be used to infiltrate roadway runoff and eliminate or reduce the need for curbs and gutters, thereby reducing infrastructure costs. LID techniques can reduce creek and flood control channel maintenance needed due to erosion and sedimentation, and reduce the size and cost of flood control structures.²⁴

The Water Board considered costs of implementing LID measures. In comments on the Administrative Draft of the Permit, the Permittees submitted an estimated average cost of \$215,000 per impervious acre treated by bioretention.²⁵ However, the ACCWP noted a per-acre cost of approximately \$660,000 for a single high-cost project, Union City’s grant-funded H Street Green Street retrofit pilot project,²⁶ which incorporated substantial amounts of relatively more-expensive pervious pavement and concrete work. It is likely that increased municipal experience over time will reduce unit costs from this high number. Additionally, it is unlikely that municipalities implementing retrofit projects would incorporate cost drivers like large areas of pervious pavers and substantial underlying concrete work, when less-expensive options (e.g., bioretention bulb-outs, district- or regional-scale projects) are available.

In addition, costs to implement GSI include operation and maintenance costs. The Water Board reviewed available estimates of annual O&M costs, including general estimates about \$1,120 – 2,240 (2021 dollars) per treated acre of impervious surface for bioretention cells, with somewhat higher numbers for porous pavement and porous pavers (about \$1,680 – 2,800 per acre

²³ Coffman, Larry. *Low Impact Development: Smart Technology for Clean Water, Definitions, Issues, Roadblocks, and Next Steps*. American Society of Civil Engineers, 2004. Web. August 3, 2021. p.1.

²⁴ U.S. EPA. *Reducing Stormwater Costs Through Low Impact Development (LID) Strategies and Practices*. EOA 841-F-07-006, December 2007.

²⁵ E.g., SCVURPPP and CCCWP comment letters of April 8, 2021, on MRP 3.0 Administrative Draft.

²⁶ ACCWP comment letter on MRP 3 Administrative Draft, April 8, 2021. p.7 of 31.

treated, 2021 dollars).²⁷ An ASCE survey of maintenance costs found that annual bioretention maintenance costs varied substantially, from \$70 – 5,450 per acre treated, but averaged about 5-7 percent of capital costs, which was consistent with U.S. EPA guidance.²⁸ O&M costs may be borne by a Permittee or an implementing private party. The costs are incremental; in the absence of an O&M cost for GSI, a Permittee or private party typically would incur an O&M cost for the landscaping or other surface that would have been present if the GSI had not been built.

Further cost estimates are discussed below. This analysis considers a range of costs running from \$50,000 per treated impervious acre as a potentially low cost for larger district- or regional-scale projects; \$213,000 per treated acre as a potentially typical cost, and \$660,000 per treated acre as a potentially high-end implementation cost for implementation of green stormwater infrastructure.

Provision C.3 would require Permittees to implement green stormwater infrastructure retrofit of up to 216.92 ac, while providing flexibility to include projects that may already be under way but not yet constructed (pursuant to Provision C.3.j.ii.(2)(e)), as well as certain projects that have not been completed by the end of the Permit term (pursuant to Provision C.3.j.ii.(2)(f)). In addition, it allows a reduction in GSI retrofit requirements for Permittees who implement ordinances to more broadly incorporate retrofit requirements into their planning and approval processes for C.3 Regulated Projects.

As a result, Permittees would be expected to incur costs ranging from \$13.7 million to \$181 million, with a more-typical expectation of about \$58 million, to comply with the Permit's GSI retrofit requirements during the coming Permit term. As noted above, those costs are likely overstated because of flexibility provided within the Permit.

In a 2013 study,²⁹ the County of Orange, on behalf of the Orange County Stormwater Program, partnered with the Construction Industry Coalition on Water Quality to develop estimates of the costs of incorporating different combinations of LID BMPs into several of the most commonly encountered Orange County development scenarios. The study examined four different development project scenarios in Orange County, ranging in size from a small urban mixed-use commercial retail and residential property with no parking provided (0.14 ac), up to a large "big-box" type commercial retail center on 12.4

²⁷ WEF, Dec. 2, 2015. *Spotlight: The Real Cost of Green Infrastructure*.

²⁸ U.S. EPA, 199. *Preliminary data summary of urban stormwater best management practices*. EPA-821-R-99-012, Washington, DC.

Clary and Piza, 2017. *Cost of Maintaining Green Infrastructure*. EWRI of the American Society of Civil Engineers, ch. 3.

²⁹ Grey et al., March-April 2013. *The costs of LID: low-impact-development BMP installation and operation and maintenance costs in Orange County, CA*. Stormwater Magazine.

ac. In three of four scenarios, the percentage of impervious area assumed was 90 percent, with LID BMPs sited predominantly within landscaping and parking areas. The study considered five different LID BMPs for application within four categories of LID BMPs: infiltration basins and concrete pavers, harvest and use cisterns, green roofs, and biofiltration systems.

The study found that “infiltration and biofiltration systems were the least-cost practice to manage the Design Capture Volume for a given project, and the least costly BMPs to operate and maintain over a 20-year period. This finding is generally consistent with a small amount of published literature and reports on LID BMP costs in the U.S.” Specific costs for LID BMP installation and O&M “ranged from just over \$50,000 for an infiltration paver system serving the small urban mixed-use residential and commercial scenario (0.14 ac, 2,800-gal design capture volume) up to \$4.7 million for a cistern and green roof combination serving the 12.4-ac big-box commercial project.

The Orange County study found: “Assuming no technical infeasibility constraints, the least-cost LID BMPs are infiltration and biofiltration systems, regardless of volume managed or project type.... Where space is available within a project site (the case studies assumed 3 percent or less of the total site area) to install an infiltration basin or biofiltration system, the cost of installing these two types of LID BMPs is under...\$2 per square foot [about \$87,000 per acre] of [impervious area].”

A 2011 study from the Minnesota Pollution Control Agency³⁰ reported data on 69 BMP projects and illustrates a wide variability in costs of different LID BMPs (Table A-1). In addition, costs are with a given BMP type are expected to vary substantially depending on factors described above.

Table A-1. BMP scost estimates.

Stormwater BMP	Dollars/Cubic Foot of Runoff
Large wet detention basin	\$3.20 (treating more than 100,000 cubic feet)
Small detention basin	\$231.67 (treating less than 10,000 cubic feet)
Constructed wetland	\$1.60
Infiltration trench	\$17.58
Bioretention basin	\$92.67
Underground infiltration	\$12.78
Pervious pavement	\$25.56

Finally, Alcosan completed a GSI cost literature review that found an estimated cost of about \$311,500 (2021 dollars) per acre of impervious surface treated for

³⁰ Minnesota Pollution Control Agency, 2011. *Best Management Practices Construction Costs, Maintenance Costs, and Land Requirements*. Prepared by Barr Engineering Company.

a range of projects that included BMPs including bioretention, infiltration trenches, pervious pavements, underground storage, and tree trenches.³¹ Together, these estimates support the range of estimates used to estimate Permittee costs during the Permit term.

While substantial portions of Provision C.3 are the same as during MRP 2, the provision includes updated expectations for Regulated Projects, including roads, that are expected to result in additional municipal costs. Those include changes to Regulated Project definitions, including roads. To the extent those create additional oversight costs, the costs should be recoverable through fees including permitting, plan review, and inspection fees. To the extent they create additional construction costs for municipal road projects, the costs are likely to be funded through funding sources including Prop 1 gas tax funding and through reprioritization of work that excludes water quality measures.

SCVURPPP estimated that the road reconstruction requirements would cost Santa Clara County Permittees up to \$300 million during the Permit term to treat about 1,400 acres of new or reworked impervious surface at an average cost of \$213,000 per acre treated.³² That estimate was prepared based on an expansive identification of what might qualify as a Regulated Project in this category, including ADA curb cuts, and particularly included a significant number of maintenance projects, as well as distributed, non-contiguous projects, that would not be expected to be regulated. That cost estimate is conservative and well in excess of Provision C.3's effect. Other commenters noted that the road reconstruction requirements would apply primarily, if not exclusively, to full-street reconstruction projects, such as active transportation/complete streets projects. While the total cost is unknown because the range of municipal projects that would be completed during the Permit term is unknown, costs are expected to be incremental relative to the total costs of those projects and within the range of unit costs described above.

Provision C.3 includes updated expectations for Special Project category C that are expected to result in minimal costs to Permittees, because implementing the category is optional, costs to implement it can be recovered via plan review and related fees, and because it replaces a similar, but more-expansive, category from MRP 2.

Provision C.3 includes an option for the Contra Costa Permittees to submit a hydromodification management report that would consist of refinements to work largely completed during MRP 2. This is expected to result in a modest cost for staff and consultant time.

³¹ Alcosan, 2012. *Starting at the Source: How our Region Can Work Together for Clean Water*. Appendix C: GSI Cost Literature Review. Pittsburgh.

³² SCVURPPP, April 8, 2021. Comment letter on Administrative Draft. p.4.

Finally, Provision C.3 includes expectations that Permittees implement and, as appropriate, update the Green Infrastructure Plans they completed during MRP 2. This represents a lower level of effort from MRP 2, with likely some level of cost savings relative to MRP 2. Overall, it is continuing implementation, including programmatic work generally tied to ongoing practices (e.g., no missed opportunities, specific and general planning, policy review, outreach to elected officials and policy makers), and work that is consistent with what the Permittees determined was feasible in their GI Plans. Green infrastructure planning expectations include the retrofit requirement discussed above.

Provision C.10 will require Permittees to incur costs to control discharges of trash. These are largely continuing costs to implement controls required under MRP 2. Permittees will incur additional costs to proceed from MRP 2's required 80 percent reduction in trash discharges to the Permit's required 100 percent reduction, to be achieved using a combination of measures determined by each Permittee, and consisting of full trash capture, or implementation of a range of controls equivalent to full trash capture.

Absent more information on the specific costs the Permittees would incur for trash reduction, this economic analysis presents a range of costs from the economic analysis completed for the Trash Amendments.³³ Statewide, the economic analysis estimates that between \$2.93 and 7.77 more per resident might need to be spent each year for the next ten years to implement the proposed Trash Amendments. The economic analysis provides estimates of compliance costs and considers the incremental costs (those beyond current costs) MS4 dischargers may incur based on implementation provisions and time scheduled in the Trash Amendments.

Permittees typically use a combination of full trash capture devices and equivalent measures. The economic analysis calculated an average per capita cost of \$9.68 for a mix of measures implemented by MS4 permittees outside the Los Angeles Region. The economic analysis also found that a broad range of compliance options is available to permittees. For example, the selection of full capture systems depends on many site-specific factors and conditions. The analysis reports that capital cost per unit ranges from \$300 per catch basin insert for installation and \$330 for annual maintenance, to \$80,000 per vortex separator system for installation (capital costs) and \$30,000 for annual maintenance. Different methods may cover different areas. For example, a drop inlet filter may cover only one acre, whereas a vortex separator system may

³³ State Water Board Resolution No. 2015-0019. Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

cover many acres, and therefore a normalized cost per acre was estimated at \$800 in capital cost and \$342 in annual O&M.³⁴

Large full trash capture devices may have substantially lower per-acre capital and O&M costs. For example, Permittees have successfully executed 18 cooperative implementation agreements (CIAs) with Caltrans as of the end of FY 2021, with a total funding contribution of over \$55 million. These municipal partnership projects could potentially treat approximately 2,000 acres and 30,500 acres of Caltrans' and municipalities' significant trash generating areas, respectively.

In addition, Permittees may claim the benefit from other implemented controls, such as GSI, that also control trash. Thus, this estimate is conservative because there would not be additional cost to implement trash controls where GSI has been implemented, and in many cases the GSI will be implemented by a private party, so that Permittees will not incur the cost of construction, operation, or maintenance, although they would incur recoverable costs for plan review and inspection.

Water Board staff's December 2019 analysis of Permittee trash control found that as of July 1, 2019, Permittees reported having controlled trash from 65,900 acres with a moderate, high, or very high trash generation rate, and that 52,600 acres remained to be controlled.³⁵ Permittee work has continued since July 1, 2019, including substantial areas controlled by cooperative projects implemented in part with Caltrans funding (Table A-2). Caltrans funding will continue to be available to Permittees for qualifying projects, partly offsetting project costs.

In addition, Permittees would incur costs to prepare an impracticability report and to complete continuing reporting. These costs are expected to be within the estimate above.

³⁴ State Water Bboard, June 2014. Draft Staff Report Including the Draft Substitute Environmental Documentation, Draft Amendments to Statewide Water Quality Control Plans to Control Trash, Appendix C: Economic Considerations for the Proposed Amendments to Statewide Water Quality Control Plans to Control Trash, p.C-44.

³⁵ Kalyan, December 11, 2019. Staff Summary Report: Item 8. Municipal Regional Stormwater NPDES Permit, Permittee Compliance with the 80 Percent Trash Load Reduction Requirement – Information Item. Water Board meeting of December 11, 2019.

Table A-2. Caltrans-funded cooperative projects by FY 2021.

County	Permittee	Location/Project Name	Funding Agreement Year	Estimated Caltrans Acres Treated	Estimated Permittee Acres Treated	Caltrans Contribution
San Mateo	San Mateo	Memorial Park - Phase 1	2017/2018	234.0	6,336.0	\$9,500,000
San Mateo	San Mateo	Memorial Park - Phase 2	2018/2019			\$6,000,000
Contra Costa	Richmond	Parkway and S. 8th Street	2017/2018	74.0	960.0	\$2,500,000
San Mateo	San Mateo	Poplar/Dore (implemented in 2019) and Coyote Point	2017/2018	42.0	765.0	\$2,123,000
Contra Costa	Richmond	Meeker Slough	2018/2019	41.4	2,265.0	\$3,000,000
Santa Clara	San Jose	Various	2017/2018	480.0	2,728.0	\$5,500,000
Alameda	Hayward	2 locations - Tennyson Arf funded	2020	119.0	1,128.0	\$1,841,000
Solano	Vallejo Waste Water	3 locations- BW Williams and Solano Ave + Austin Creek (amended)	2020	379.4	7,992.0	\$3,338,000
San Mateo	City of San Mateo	Poplar Golf Course	2019/2020	16.0	333.0	\$830,000
San Mateo	East Palo Alto	O'Connor Pump Station	2019/2020	39.0	864.0	\$521,000
Alameda	Alameda County	Estudillo Canal	2019/2020	256.0	2,620.0	\$2,175,000
San Mateo	Daly City	Vista Grande	2019/2020	154.0	1,915.8	\$3,440,000

County	Permittee	Location/Project Name	Funding Agreement Year	Estimated Caltrans Acres Treated	Estimated Permittee Acres Treated	Caltrans Contribution
Contra Costa	Concord	Hillcrest Park Regional Project	2019/2020	90.0	509.3	\$4,300,000
Contra Costa	Contra Costa County	Tara Hills	2019/2020	41.0	457.8	\$3,945,000
Contra Costa	Richmond/El Cerrito	Bayview	2020/2021	31.0	840.0	\$2,300,000
Alameda	Oakland	Mandela & 24th	2020/2021	16.8	583.9	\$2,900,000
Alameda	Emeryville	MacArthur	2020/2021	3.8	77.0	\$680,000
Santa Clara	Palo Alto	Embarcadero	2020/2021	20.5	189.0	\$598,000
Total				2,038	30,563	\$55,491,000

Provision C.11 will require Permittees will incur costs to control discharges of mercury. Those costs are largely for continuing requirements and, thus, are expected to be broadly similar to MRP 2. To the extent that Permittees implement GSI retrofit to achieve mercury reductions, that work would also reduce PCBs loads. Because the same control action is likely to reduce both mercury and PCBs, estimated costs for implementation have been considered below, under the Provision C.12 discussion.

Provision C.12 will require Permittees to continue to implement measures to reduce discharges of PCBs consistent with the applicable TMDL. Key aspects of this provision are consistent, or roughly consistent, with expectations under MRP 2. Lower costs should be incurred for some expectations. For example, in MRP 2, the Permittees developed a demolition debris control program, which they are now implementing. The cost to develop the program was likely higher than the implementation cost, which consists significantly of outreach and education using materials prepared during MRP 2. There are some small additional costs (relative to the current cost of implementing the current demolition debris program) associated with enhanced requirements for the demolition debris program. These include small costs for additional efforts to obtain official

documentation to ensure that building materials from demolished buildings containing PCBs concentrations greater than 50 ppm were properly disposed. There will also be small additional costs for demolition site inspection to ensure implementation of control measures at project sites to minimize off-site migration of PCBs. These inspection costs should be minor as economies of scale can be realized by integrating these inspections into the inspection program required pursuant to Provision C.6. Permittees will continue to investigate contaminated sites for referral to the Water Board, DTSC, or U.S. EPA for cleanup. While that may result in continuing costs or somewhat increased costs as compared to MRP 2, overall the requirements are expected to be roughly equivalent.

Permittees are expected to continue to implement actions to reduce discharges of PCBs to the MS4. These include implementing controls to capture PCBs before they can discharge to the MS4, which could include GSI, diversion of flows to the sanitary sewer for treatment, or other controls. To demonstrate progress towards achieving the wasteload allocation during the Permit term, Permittees are expected to address discharges from about 3,000 ac of impervious surface in old industrial areas using a combination of measures that they determine.

Based on the above GSI unit cost estimates, the cost to accomplish that reduction is likely to range from about \$150 million to \$2 billion, with a typical cost of about \$639 million. This estimate is likely to be conservative (i.e., likely greater than the actual cost incurred) because GSI or treatment control measures implemented by private parties would reduce Permittee costs to self-implement controls; Permittees can account for benefit from other actions, including their GSI retrofit work pursuant to Provision C.3 and implementation of trash controls pursuant to Provision C.10, and Permittees are likely to implement a mix of BMPs that is less costly than the maximum, and to include less-costly district-scale or regional BMPs. In addition, costs for diversion to sanitary sewers may be lower on a unit cost basis than GSI costs. A portion of project funding will be available from Caltrans pursuant to alternative compliance associated with its MS4 permit, and Caltrans ROW is constrained, so off-ROW implementation is a preferred path for Caltrans, which has indicated its intent to continue to support cooperative projects, including through its Clean California initiative.

Provision C.12 also requires the creation of a two new program to control PCBs. The first program is to control PCBs when bridge and overpass roadways are replaced or undergo major repair. The costs associated with creation of this new program will be small because the effort consists in ensuring that roadway crews follow a protocol (to be developed by Caltrans) to ensure proper management and disposal of PCB-containing caulk in roadway expansion joints when bridge and overpass roadways are replaced or substantially repaired. Small additional

costs should be expected associated with the creation of the second new program Permittees must develop to ensure proper management of PCBs in oil-filled electrical equipment (OFEE) for municipally owned electrical utilities and collaborate with the Water Board to determine PCBs loadings in OFEE from non-municipally owned electrical utilities. Costs for both of these new programs is expected to be small because both involve simply making sure that proper procedures are being followed.

Provision C.14 requires Permittees to control discharges of bacteria consistent with applicable TMDLs or to address identified exceedances of water quality objectives.

Provision C.14.a requires two Permittees, the cities of Mountain View and Sunnyvale, to implement measures to control bacteria to address identified exceedances of water quality objectives. While this work is being called out in a subprovision that was not present in MRP 2, the expectations largely reflect continuation of work the cities were implementing during MRP 2 pursuant to MRP 2's, and the Permit's, prohibition on discharges of non-stormwater to the MS4. That includes evaluation of municipal operations for bacteria discharges, inspect for illicit connections of sanitary flows to the storm sewer system, incorporation of bacteria concerns into commercial and industrial business inspections, provision of pet waste stations, collection of trash, control of bacteria sources associated with unsheltered homeless populations, and public outreach. C.14.a requires the Permittees to focus or increase these actions, which are also conducted across municipalities broadly, in areas near the known bacteria water quality exceedance locations. The cities may incur additional incremental costs associated with additional inspections, coordination with the sanitary sewer agencies on collection system operation and maintenance, and greater levels of effort in each of the categories. These costs are expected to be recoverable through inspection fees with existing staff resources. Where new actions are required, their unit costs are expected to be similar to those presented in the San Pedro Creek and Pacifica State Beach Bacteria TMDL Staff Report, Section 12.3: Economic Considerations,³⁶ and with estimates presented above for green stormwater infrastructure implementation.

Provision C.14.c requires the City of San Mateo to control discharges of bacteria to its Marina Lagoon beaches. Similar to Provision C.14.a, the initial measures are continued effort, with incremental expansion, of existing work required under MRP 2, like illicit discharge detection and elimination, trash control, and public information and outreach. The City is expected to incur some additional costs for a potentially elevated level of effort, including monitoring. If water quality objectives are not achieved, then the City will incur costs to complete a report

³⁶ San Francisco Bay Regional Water Board, Nov. 2012. *TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach: Staff Report*. pp.105-110).

evaluating additional actions sufficient to achieve the objectives, which may lead to costs in this permit term. Depending on the report content, an outside contractor may charge approximately \$70,000 – 200,000 to complete this report (assuming a contractor rate of \$150/hr).

Provision C.14.d requires the City of Half Moon Bay and San Mateo County to control bacteria discharging to Pillar Point Harbor and Venice Beach. Similar to Provision C.14.a, the initial measures are continued effort, with incremental expansion, of existing work required under MRP 2, like beach bacteria monitoring, illicit discharge detection and elimination, trash control, and public information and outreach. Expansion of work includes, for example, including bacteria control in staff training. The City and County may incur some additional costs for a potentially elevated level of effort. If water quality objectives are not achieved, then the City and County will incur costs to complete a report evaluating additional actions sufficient to achieve the objectives, which may lead to costs in a subsequent permit term.

The Permittees covered by the above C.14 subprovisions could implement green stormwater infrastructure to eliminate discharges and reduce bacteria concentrations in remaining discharges. Where GSI is implemented pursuant to Provision C.3 requirements, there is not expected to be an additional cost to the Permittees for a bacteria control benefit to be realized. Similarly, trash control measures implemented pursuant to Provision C.10 may provide some bacteria control benefit, but would not result in additional incremental costs to the Permittees. However, where the Permittees undertake control actions, such as green stormwater infrastructure retrofit, that go beyond Provision C.3 requirements, then the cost of that work would be expected to be consistent with the estimates presented above for Provisions C.3 and C.12.

Provision C.18 requires the County of San Mateo to control discharges of sediment in the Pescadero-Butano watershed consistent with the applicable TMDL. Specifically, the County would be required to create a prioritized list of road projects with the potential to contribute sediment to the Pescadero-Butano and San Gregorio watersheds. The County would be required to take measures to reduce sediment delivery from County roads in the Pescadero-Butano watershed. The Water Board staff report for the TMDL economic analysis estimated such costs at about \$35,000 per mile for unpaved roads, and \$60,000 per mile per paved roads. The total lengths of roads to be controlled under the TMDL are 325 (unpaved) and 325 (paved), and the total costs for the work were estimated at about \$37 million over a 20-year implementation period.³⁷ The Permit requires implementation of actions in 20 percent of the Pescadero-Butano watershed, but none in the San Gregorio Creek watershed during this

³⁷ San Francisco Bay Regional Water Quality Control Board, Dec. 11, 2018. *TMDL for Sediment and Habitat Enhancement Plan for Pescadero-Butano Watershed: Staff Report*.

Permit term. As a result, implementation costs are estimated conservatively at about \$7.2 million during the Permit term. However, projects may be completed as part of other prioritized maintenance projects or otherwise such that the Permittee does not incur that full level of costs, but rather a reduced amount that is offset by the Permittee's costs for projects it would have completed anyway. In addition, the Permittee may incur costs associated with creating the prioritized list and with monitoring the effectiveness of completed projects.

d. New provisions

Although C.17, C.20, and C.21 are new provisions, their substantive requirements generally reflect work that was already required or already being completed, as described further below. Permittees may incur costs for going beyond required or continuing work.

Provision C.17 requires Permittees to coordinate internally and use existing resources to report on the locations of homeless populations in their jurisdictions. Permittees already have this information at different levels of detail. Some permittees, such as Fremont, Oakland, and San Jose, have detailed databases or maps of populations; other Permittees are small enough that municipal staff are familiar with where the populations are located; others rely on heat maps for a general understanding. The Permit allows flexibility in this reporting, but Permittees would be expected to incur a modest cost to collect and report this information.

Permittees must collectively prepare a BMP report that identifies what Permittees and stakeholders are doing to control discharges associated with unsheltered homelessness, and the effectiveness of these controls. Permittees are likely to incur costs for coordination and report preparation. In addition, Permittees must prepare two reports on their implementation of BMPs, including the portion(s) of the population reached and the gap—that is, the work left to be done.

MRP 2 required the Permittees to control illicit non-stormwater discharges, including discharges of trash and human waste from unsheltered homeless populations. To the extent that Provision C.17 simply refines and clarifies the pre-existing mandate, it is a continuing requirement, with an additional expectation for coordination and reporting as noted above.

Overall, the solutions to homelessness are broadly outside Permit requirements. A 2015 report found that effective implementation of such solutions, such as providing housing to unsheltered individuals, could reduce costs to government, because shifting costs from emergency services and the justice system use to housing and jobs would be cheaper and generate more revenue than the *status*

quo.³⁸ Thus, while there is a cost to implementing measures to address unsheltered homelessness, the overall effect of implementing effective measures, including those to control discharges of trash and human waste, could be to reduce costs to government.

Provision C.20 requires Permittees to develop a cost reporting methodology by December 31, 2022, and then to submit fiscal analyses annually starting in 2024. Permittees are expected to incur costs to collectively develop the methodology and then to implement it. In general, this provision requires tracking and reporting of information that should be available, but for which there will be needed internal coordination. The work to prepare a methodology allows flexibility to understand the form that cost information is available and develop efficient means for reporting. The work likely to be completed using existing Permittee staff resources and consulting assistance available within the programs.

Provision C.21 requires development of an asset management program to manage Permittee (i.e., public) hard assets (e.g., bioretention cells, pervious pavements, trash capture devices). The asset management plan is expected to improve the Permittees' understanding of the condition and performance of their stormwater infrastructure, to account for additional stressors related to climate change, and to identify cost factors to support more-accurate forecasting and budget development.

U.S. EPA's Water Finance Clearinghouse and the CSU Sacramento Office of Water Program's Environmental Finance Center (EFC) are conducting work to support stormwater asset management. The EFC has developed draft stormwater finance and asset management guidance and toolkits, including resources for estimating stormwater costs, and is supporting California municipal stormwater programs to test and refine the toolkit with the intent of using the results of asset management planning to support the development of stormwater utilities to fund stormwater programs.³⁹

The Permittees have implemented measures to support asset management planning. They have mapped many of their hard assets (e.g., structural stormwater control measures) and regularly inspected them to determine their condition. They use modern data collection tools, including databases and GIS systems, to improve information collection and tracking efficiencies and improve their understanding of the condition and performance of their stormwater assets. The Water Board expects the Permittees' costs to comply with the Permit's

³⁸ Flaming et al., 2015. *Home not found: The cost of homelessness in Silicon Valley*. Destination Home and the County of Santa Clara.

³⁹ Odusoga, March 28, 2019. "Asset Management Storm Water Roundtable Presentation," U.S. EPA, slide 28.

asset management requirements to be mitigated to some degree by these efforts.

Asset management results in potential cost savings over time and may provide a sound basis for establishing utility fees to support sustained funding of stormwater programs, but the initial investment of resources and time can be high. The City of San Diego's much more comprehensive asset management plan (including, for example, hard assets like flood management infrastructure and soft assets like outreach materials) was developed over a period of about five years and cost approximately \$2 million, not including staff time.⁴⁰ Since 2013, when the plan was finished, San Diego has spent as much or more on follow-up work, like expanding its asset inventory. \$4 million is a significant investment, but for context, San Diego has a roughly \$3 billion stormwater quality and flood management program over 18 years. There are also cost-saving benefits for an effective asset management program.⁴¹

San Diego's asset management plan is significantly larger in scope than that required by the Permit, which focuses on publicly owned hard assets. As a result, Permittee costs to develop asset management plans are expected to be substantially less, in part because, as noted above, they are primarily tracking and reporting on existing controls for which MRP 2 already required tracking and reporting efforts, and for which the Permittees have established systems to accomplish that work. As such, the asset management approach primarily will require organization of existing efforts with an additional incremental cost.

5. Costs of Not Implementing the Permit

While it is important to consider the cost of compliance, it is also important to consider the costs that would be incurred by not fully regulating or controlling MS4 discharges to receiving waters. The Water Boards have long recognized that water quality impairment negatively impacts the economy, while improved water quality can have a positive impact (see, for example, Order WQ 2000-11). The costs of not implementing the Permit are likely to be significant and could include adverse impacts to public health associated with illness from water contact recreation and ingestion of water with harmful levels of pathogens; increased threat of disease, including cancer, from consumption of fish containing harmful levels of mercury and PCBs; threats to public and private infrastructure, properties, and aquatic habitat from erosion and sedimentation; impacts to contact and non-contact water recreation, including swimming, boating, surfing, wind- and kite-surfing, wading, birding, walking, and hiking, associated with discharges of trash; impacts to property

⁴⁰ Region 3 Water Board Fact Sheet for Order No. R3-2019-0073, Citing personal communication with Drew Kleis, Deputy Director, City of San Diego Transportation and Storm Water Department Storm Water Division, April 22, 2019.

⁴¹ URS Corporation. July 19, 2013. Transportation and Storm Water Department Storm Water Division: Watershed Asset Management Plan, City of San Diego. p.7.

values associated with the short- or long-term presence of pollutants in receiving waters, and associated impacts to the Bay Area quality of life, that includes a significant outdoor component engaged with the Bay Area's water bodies. Below, a few of these costs are discussed in more detail.

Impairments in water quality can lead directly to increased health care costs. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.⁴² A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8 percent among bathers at those beaches resulted in about \$3 million annually in health-related expenses.⁴³ These numbers can likely be extrapolated to the Bay Area, where many beaches support significant contact recreation while at the same time exhibiting bacteria impairments. Thus, failure to bacteria controls could result in significant health expenses to the public, while implementing such controls could result in significant savings.

Urban runoff and its impact on receiving waters also place a cost on tourism. The California Division of Tourism has estimated that each out-of-state visitor spends \$101 a day. The experience of Huntington Beach provides an example of the potential economic impact of poor water quality. Approximately 8 miles of Huntington Beach were closed for two months in the middle of summer of 1999 due to bacteria exceedances, impacting beach visitation and undoubtedly impacting the local economy.

Similarly, proper trash management can save a municipality significant amounts of money in addition to providing water quality benefits. Even with the changes in recycling markets over the past few years, certain items, such as metals, remain profitable to divert from residential waste streams.⁴⁴ Similarly, adequate trash pickup and collection can cut down on complaints by residents and the resources associated with responding to them⁴⁵ and can also reduce the costs of maintaining full-trash capture devices.⁴⁶ Finally, source control methods, such as bans, taxes, or fees that reduce the use of certain items, can generate an income stream for local

⁴² Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

⁴³ Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

⁴⁴ Brosnahan, Cori. "Despite Recycling Success, S.F.'s Zero Waste Goal Remains Elusive," *San Francisco Public Press* (Nov. 6, 2020).

⁴⁵ Daly, Clara-Sophia. "Newsom's experiment to get rid of public trash bins in San Francisco seems to have failed," *Mission Local* (March 21, 2021).

⁴⁶ San Francisco Estuary Partnership, "Bay Area-wide Trash Capture Demonstration Project," (May 8, 2014), pp. 39-40.

governments, reduce full trash capture maintenance costs, and reduce tipping fees for disposing of the materials removed from the devices.⁴⁷

As noted above, the costs of not implementing the Permit are likely to be significant, including economic and non-economic: adverse impacts to public health associated with illness from water contact recreation and ingestion of water with harmful levels of pathogens; increased threat of disease, including cancer, from consumption of fish containing harmful levels of mercury and PCBs; threats to public and private infrastructure, properties, and aquatic habitat from erosion and sedimentation; impacts to contact and non-contact water recreation, including swimming, boating, surfing, wind- and kite-surfing, wading, birding, walking, and hiking, associated with discharges of trash; impacts to property values associated with the short- or long-term presence of pollutants in receiving waters, and associated impacts to the Bay Area quality of life, that includes a significant outdoor component engaged with the Bay Area's water bodies.

The Santa Clara Valley Open Space Authority, focusing on open space, estimated that ecosystem services in Santa Clara County provide an estimated benefit of \$1.6 to 3.8 billion annually, or about \$1,900 to 4,600 per acre, noting they were provided by "natural capital like...wetlands, rivers and streams...as well as urban parks and open spaces."⁴⁸ In the absence of the Permit, as noted above, those services are likely to be impaired, resulting in reduced economic value to Santa Clara County and the Bay Area. Extrapolating that estimate to the other four counties with MRP Permittees shows a potentially even more significant economic impact from not implementing the Permit.

The Center for Neighborhood Technology issued a 2010 guide to recognizing the value of one component of the Permit's program, green infrastructure.⁴⁹ The guide includes descriptions of impacts in the absence of GI implementation, including higher costs for alternate means of accomplishing the benefits, reduced community livability, and impacts to public health.

⁴⁷ EOA, City of Milpitas Trash Capture Feasibility Study, 2017, pp. 1, 13 (estimating reduction achieved by plastic bag ban and achievable by polystyrene ban.); see also Stieb, Matt. "Maine Makes U.S. Recycling Actually Work Again," *New York Magazine* (July 21, 2021).

⁴⁸ Santa Clara Valley Open Space Authority, 2014. *Healthy Lands and Healthy Economies: Nature's Value in Santa Clara County*.
https://www.openspaceauthority.org/system/user_files/Documents/NaturesValue_SCC_int.pdf.
Santa Clara Valley Open Space Authority, 2018. *Healthy Lands and Healthy Economies: Natural Capital in Santa Clara, Santa Cruz, and Sonoma Counties*.
https://www.openspaceauthority.org/system/user_files/Documents/HLHE%20-%20Regional%20Report.pdf.

⁴⁹ Center for Neighborhood Technology, 2010. *The Value of Green Infrastructure: A guide to recognizing its economic, environmental and social benefits*.
https://www.cnt.org/sites/default/files/publications/CNT_Value-of-Green-Infrastructure.pdf.

6. Benefits associated with implementing the Permit

Permit implementation must also be viewed in terms of its value, both quantitative and qualitative, to the public. One way of measuring this value quantitatively is by estimating how willing residents are to pay for improvements to water quality. However, benefits from stormwater controls go beyond improving water quality. They include reducing the urban heat island effect, helping to make the water supply more reliable and cost effective, and supplying ecosystem services. These benefits are discussed in more detail below.

a. Public Willingness to Pay for Water Quality Improvement

U.S. EPA estimated household willingness to pay for such improvements to be \$158 - 210 annually or \$13 - \$17.50 monthly.⁵⁰ This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento, study corroborates U.S. EPA's estimates, reporting annual household willingness to pay for statewide clean water to be \$180, or \$15 monthly.⁵¹ When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Los Angeles voters' 2018 approval of Measure W, which imposes a parcel tax that is projected to raise approximately \$300 million per year to clean stormwater runoff, promote capture and use projects, and add urban green space, is another indication of willingness to pay for water quality improvement. Measure W, which imposes an impervious surface-based fee, was estimated to cost a typical household about \$83/year.⁵² That cost is necessarily in addition to existing expenditures in LA for clean water, which include, but are not limited to, urban runoff management program costs of up to \$67 per household. This is consistent with the U.S. EPA and California State University, Sacramento findings above.

A study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost \$2.8 billion but provide \$5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be \$5.7 to

⁵⁰ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. p. 68793.

⁵¹ State Water Board, 2005. NPDES Stormwater Cost Survey. p. iv.

⁵² McNary, Oct. 19, 2018. *Measure W: A needless tax on rain, or LA's best solution to drought?* LAist. <https://laist.com/news/measure-w-a-new-tax-on-landowners-to-catch-las-rain>.

\$7.4 billion, while benefits could reach \$18 billion.⁵³ Costs are anticipated to be borne over many years – probably ten years at least. Thus, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by U.S. EPA, which found that the benefits of implementation of its Phase II stormwater rule would also outweigh the costs.⁵⁴

b. Urban Heat Island Mitigation

Installing green infrastructure mitigates urban heat island effects, with greater returns on investment for installations located in areas lacking tree canopies and green spaces. In urban areas, buildings and pavement retain heat, making them hotter than surrounding non-urban areas, known as the urban heat island effect. Climate change will continue to exacerbate urban heat island effects, but trees and vegetation can decrease local temperatures, particularly if they are distributed throughout an area. Reduced temperatures during hot weather not only make it more comfortable for people to recreate outside, but can also save lives during extreme heat events. The San Francisco Estuary Institute found that if Los Angeles County had tree coverage at 40 percent, as opposed to the baseline of 16 percent, during a September 2010 dry Santa Ana event, there would have been a 29 percent reduction in mortality, equivalent to saving 23 lives. In Los Angeles, De Guzman et al. (2020) found that relative to the average mortality rate, during an average five-day heat wave in Los Angeles County there are 4.1 percent more deaths on the first day and 11.9 percent more deaths on the fifty day.⁵⁵ While the study only modeled mortality, it can reasonably be expected that hospitalizations and health conditions brought on by heat stress would be reduced, as well. In addition to trees, other GSI, such as bioswales, rain gardens, and green roofs can also reduce temperatures.⁵⁶

Installing green infrastructure in economically disadvantaged areas may have additional benefits. In metropolitan areas nationwide, neighborhoods with lower median household incomes are associated with less urban tree cover.⁵⁷ In areas where the federal government historically redlined, current average incomes tend to be lower and temperatures tend to be hotter because of historic

⁵³ LA Regional Water Board, 2004. *Alternative Approaches to Stormwater Control*.

⁵⁴ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

⁵⁵ De Guzman, et al., 2020. *Rx for Hot Cities: Climate Resilience Through Urban Greening and Cooling in Los Angeles*. TreePeople. <https://www.treepeople.org/wp-content/uploads/2020/09/RX-for-hot-cities-report.PDF>

⁵⁶ Georgetown Climate Center. ND. *Green infrastructure strategies and techniques*. <https://www.georgetownclimate.org/adaptation/toolkits/green-infrastructure-toolkit/green-infrastructure-strategies-and-techniques.html>

⁵⁷ Schwarz et al., 2015. *Trees grow on money: Urban tree canopy cover and environmental justice*. PLoS ONE 10(4): e0122051. <https://doi.org/10.1371/journal.pone.0122051>

disinvestment in those neighborhoods.⁵⁸ Deaths from heat waves are disproportionately suffered by the poor.⁵⁹ Accordingly, green infrastructure projects in economically disadvantaged areas could help to alleviate longstanding inequities and improve health outcomes for particularly vulnerable populations.

c. Water Supply Cost Savings and Co-Benefits

Stormwater capture can be an effective way for Permittees to achieve the goals of the CWA and Permit requirements by preventing stormwater and associated pollutants from discharging to receiving waters, although Bay Area soils with limited infiltration rates can limit the applicability of measures that rely substantially on infiltration. Stormwater capture has also become the focus of intense interest during California's current drought and in the wake of California's most-recent 2012-2019 drought. The Water Boards have recognized the importance of treating stormwater as a valuable resource where capture and use can result in water supply cost savings, as well as multiple other benefits within a watershed. Among other efforts, the State Water Board's Strategy to Optimize Resource Management of Stormwater (STORMS) seeks to promote stormwater capture and use. STORMS' recent 2018 report, *Enhancing Urban Runoff Capture and Use*, points out that among a variety of benefits, "stormwater capture can also reduce reliance on imported water from distant sources, which reduces inter-basin (or inter-region) transfers and polluted runoff. Stormwater supports the fit-for-purpose water supply concept by satisfying less-sensitive water demands, such as certain household, landscaping, and commercial needs, with mildly polluted water. Runoff from roads and driveways can be captured and harvested locally using distributed hybrid systems (for example, bioretention with an underdrain that feeds a cistern used for irrigation) configured to provide non-potable water for human use."⁶⁰

The Permit supports investment in infrastructure to create a resilient local water supply. The potential for water usage from stormwater is significant, with Diringer et al. (2020) from the Pacific Institute estimating that stormwater capture from paved surfaces and rooftops in the urbanized Bay Area and Southern

⁵⁸ Hoffman, et al., 2020. *The effects of historical housing policies on resident exposure to intra-urban heat: a study of 108 U.S. urban areas*. Climate. <https://www.mdpi.com/2225-1154/8/1/12/htm>

⁵⁹ Kessler, Ben. "Heat waves fall hardest on poor and elderly, experts say," *NBC News* (July 20, 2019); Kaplan, Sarah, "Heat waves are dangerous. Isolation and inequality make them deadly," *Washington Post* (July 21, 2021).

⁶⁰ State Water Board, April 10, 2018. STORMS: Projects 1a Promote Stormwater Capture and Use and 1b Identify and Eliminate Barriers to Stormwater Capture and Use. Products 1 – CSU Sacramento. Final Report: Enhancing Urban Runoff Capture and Use. pp. 18-19/

California could add 420,000 to 630,000 acre-feet in average annual water supply, or about 6 to 10 percent of annual water usage in those areas in 2014.⁶¹

The Permit gives Permittees the flexibility to develop multi-benefit stormwater management projects that will improve water quality while also providing benefits such as recharging of groundwater basins for local water supply and implementation of LID and green streets policies. Shimabaku et al. (2018) from the Pacific Institute emphasizes that effective urban stormwater capture provides an opportunity to address multiple benefits, including flood control, water quality impairments, improving water supply reliability, providing habitat, reducing urban temperatures, reducing energy use, creating community recreation spaces, and increasing property values.⁶²

Diringer et al. analyzed stormwater capture project costs and benefits as they affect the cost of an acre-foot of water. They found that failing to consider the effects of co-benefits results in inflated net project costs. They gathered data from rounds 1 and 2 of Prop 1E and Prop 84 project proposals. Of a total of fifty projects, 26 addressed urban runoff and 24 dealt with non-urban runoff. The authors found that after accounting for the projects' benefits, the net levelized cost for urban stormwater capture projects decreased from \$1,030/acre-foot to \$150/acre-foot, with some projects yielding net benefits. Monetized benefits considered in their calculation included flood damage reduction, water quality, energy savings, community recreation, public use, property values, habitat value, CO₂ equivalents, and avoided costs. Because many projects reported limited benefits categories, the overall cost per acre-foot would likely be even lower than \$150 when other cobenefits are considered.

d. Ecosystem Services Benefits

In addition to the foregoing, there are various other environmental benefits resulting from the Permit. For example, the 2018 STORMS report describes a range of benefits of capture and use, suggesting that “designing stormwater infrastructure to directly support ecosystems broadens the traditional approach to stormwater management. In this broader sense, retained stormwater can be put into soil where soil biota, macrophytes, and stream interflow systems improve water quality and ecosystems supported by baseflow or high groundwater. Ecosystem benefits include habitat improvement, increased food sources, carbon sequestration, pollutant uptake, reduced ozone, and reduced heat island effects.... Improved baseflow results in decreased water temperatures and prolonged dry weather flows, and increased amounts and

⁶¹ Diringer et al., March 24, 2020. *Economic evaluation of stormwater capture and its multiple benefits in California*. PLoS ONE 15(3): e0230549.

⁶² Shimabaku et al., June 2018. *Stormwater capture in California: Innovative policies and funding opportunities*. Pacific Institute. p.2.

types of soil biota will aid in carbon sequestration and pollutant uptake. Local stormwater capture can also lead to energy-saving schemes that (1) capture water before it becomes contaminated with the pollutants on streets and in sewers; (2) rely on energy-efficient processes for removing contaminants; (3) treat water only to the extent necessary for intended use (fit-for-purpose water); and (4) obviate the need for diversion and large, centralized, energy-intensive treatment and distribution approaches.”⁶³

e. Other Benefit Considerations

The Pacific Institute and the University of Santa Barbara’s Bren School of Environmental Science and Management framed the topic of moving towards multiple benefit approaches for water management. The organizations plan to develop a systematic framework for identifying and incorporating the costs and benefits of water management strategies into decision making. They find a broader consideration of the benefits associated with water management decisions will achieve broader project support, avoid unintended consequences, optimize resources and cost sharing, and increase transparency.”⁶⁴

Such a framework would support a more robust consideration of potential economic benefits of stormwater management projects not considered in this economic analysis, such as:

- Reduced frequency, area, and impact of flooding. Stormwater BMPs that reduce runoff volumes and consequently flood volumes. The decrease in potential damage provides economic benefit.
- Reduced cost of public infrastructure. On-site volume control and stormwater BMPs can downsize or eliminate stormwater conveyance infrastructure, and reduce costs to address downstream erosion and sedimentation, resulting in reduced costs.
- Reduced water treatment costs. A reduction in runoff volume can reduce downstream costs of water treatment, while also increasing the value of riparian properties and the utility of recreational visitors. Stormwater BMPs that include infiltration can improve and sustain stream baseflow conditions to better maintain downstream habitat.⁶⁵
- Increased property values where GSI and LID projects are implemented. In a series of studies listed in a 2013 U.S. EPA report, the benefit-to-cost ratios of

⁶³ State Water Board, April 10, 2017. *Enhancing Urban Runoff Capture and Use*. STORMS Projects 1a and 1b.

⁶⁴ Pacific Institute and Bren School, April 2019. *Executive Summary: Moving toward a multi-benefit approach for water management*. UCSB. pp. II-III.

⁶⁵ WERF, 2010. *Using rainwater to grow livable communities*. Web.

four LID/GSI projects in Sun Valley were listed. All four showed a ratio of greater than 1, indicating that, over the 50-year evaluation period, the benefits of these projects are higher than their cost.⁶⁶

Considering the foregoing, the Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses and the economic cost information supports protecting those beneficial uses.

V. RELEVANT STATUTES, REGULATIONS, PLANS AND POLICIES

A. Legal Authorities

This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the U.S. EPA and CWC chapter 5.5, division 7 (commencing with section 13370). This Order serves as an NPDES permit for point source discharges to surface waters. This Order also serves as waste discharge requirements pursuant to CWC article 4, chapter 4, division 7 (commencing with section 13260).

In addition to the legal authority citations below, they are also provided with each permit provision in this Fact Sheet.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

40 CFR 122.26(d)(2)(i) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i) require that each Permittee’s permit application “shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: (A) Control through ordinance ...or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity; (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate

⁶⁶ U.S. EPA, August 2013. *Case studies analyzing the economic benefits of low impact development and green infrastructure programs*, EPA 841-R-13-004.

storm sewer of spills, dumping or disposal of materials other than storm water; (D) Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system; (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) requires “a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. [...] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. [...] Proposed management programs shall describe priorities for implementing controls.”

40 CFR 122.26(d)(2)(iv)(A -D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Control of illicit discharges is also required.

CWC 13377 – CWC section 13377 requires that “[n]otwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.”

B. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans – San Francisco Bay and Sacramento and San Joaquin River Basins

The CWA requires the Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect beneficial uses, and an antidegradation policy to prevent degrading of waters. The Water Board adopted the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), which designates beneficial uses, establishes water quality

objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

Section 4.14, the Urban Runoff Management, Comprehensive Control Program section, of the Basin Plan, requires the Permittees to address existing water quality problems and prevent new problems associated with urban runoff through the development and implementation of a comprehensive control program focused on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Basin Plan's comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s. Pursuant to CWC sections 13263 and 13377, the requirements in this Order implement the Basin Plan.

Section 4.8 - Stormwater Discharges of the Basin Plan established the Water Board's phased approach towards attainment of water quality objectives in waters that receive stormwater discharges and recurrent permit term consideration of water quality based effluent limitations, wherein the Water Board will first require entities subject to NPDES permits for stormwater discharges to complete implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the maximum extent practicable. NPDES permits for stormwater discharges will require completion of technically and economically feasible control measures as soon as possible. If this first phase does not result in attainment of water quality objectives, the Water Board will consider permit conditions which may require implementation of additional control measures. In such circumstances, the Water Board may consider dischargers' proposed schedules for identification and implementation of additional control measures designed to attain water quality objectives. Such schedules shall be as short as practicable and will only be considered for inclusion in permits when a discharger has demonstrated the following:

- (a) A diligent effort to quantify pollutant levels and the sources of the pollutant in stormwater discharges; and
- (b) Documentation of completion of implementation of all technically and economically reasonable control measures.

The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Region 5 Basin Plan) similarly includes water quality standards for each water body it covers, including total maximum daily loads. It contains requirements for MS4 permittees that discharge into waters covered by the plan, such as the East Contra Costa Permittees.

2. Ocean Plan

In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on October 16, 2012, and it was approved by the Office of Administrative Law and U.S. EPA. The Ocean Plan is applicable, in its entirety, to ocean waters of the state. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to CWC sections 13263 and 13377, the requirements of this Order implement the Ocean Plan.

The Ocean Plan prohibits the discharge of waste to designated Areas of Special Biological Significance (ASBS). ASBS are ocean areas designated by the State Water Board as requiring special protection through the maintenance of natural water quality. The California Ocean Plan states that the State Water Board may grant an exception to California Ocean Plan provisions where the State Water Board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served. In 2012, the State Water Board adopted Resolutions 2012-0012 and 2012-0031 (ASBS Exception), which grant an exception to the Ocean Plan prohibition on discharges to ASBS for a limited number of applicants, including San Mateo County for stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS. The ASBS Exception contains "Special Protections" to maintain natural water quality and protect the beneficial uses of the ASBS. In order to legally discharge into an ASBS, San Mateo County must comply with the terms of the Special Protections and obtain coverage under this Order. This Order incorporates the terms of the Special Protections for San Mateo's discharges into the ASBS.

3. Inland Surface Waters, Enclosed Bays, and Estuaries Plan

The State Water Board adopted various provisions that collectively which make up the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) of California. Part 1 Trash Provisions was adopted by the State Water Board on April 7, 2015 through Resolution No. 2015-0019. OAL approved it on December 2, 2015 and U.S. EPA approved it on January 12, 2016. Part 2 Tribal Subsistence Beneficial Uses and Mercury Provisions was adopted by State Board on May 2, 2017 through Resolution No. 2017-0027. OAL approved it on June 28, 2017 and U.S. EPA approved it on July 14, 2017. Part 3 Bacteria Provisions and Variance Policy was adopted by State Board on August 7, 2018 through Resolution No. 2018-0038. OAL approved it on February 4, 2019 and U.S. EPA approved it on March 22, 2019. This Order implements the ISWEBE.

4. Statewide Trash Provisions

To control trash, the State Water Board on April 7, 2015, adopted trash provisions into both the Ocean Plan and the ISWEBE. Together, they are collectively referred

to as “the Trash Amendments.” The Trash Amendments: (1) establish a narrative water quality objective for trash, (2) establish a prohibition on the discharge of trash, (3) provide implementation requirements for permitted storm water and other discharges, (4) set a time schedule for compliance, and (5) provide a framework for monitoring and reporting requirements. The Water Board is required to implement the new Trash Provisions through NPDES permits for MS4 permits. The water quality objective established by the Trash Provisions serves as a water quality standard federally mandated under CWA section 303(c) and the federal regulations (33 U.S.C. § 1312, 40 CFR § 131.). This water quality standard was specifically approved by U.S. EPA following adoption by the State Water Board and approval by the Office of Administrative Law. This Order implements the Trash Amendments.

5. Enclosed Bays and Estuaries Plan

In 2008, the State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality Provisions. It is was most recently amended on June 5, 2018 and became effective on March 11, 2019. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. This Order implements the Sediment Quality Provisions to the extent they are applicable.

6. National Toxics Rule (NTR) and California Toxics Rule (CTR)

U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants. This Order is consistent with NTR and CTR

7. Antidegradation Policy

Federal regulations at 40 CFR section 131.12 require that state water quality standards include an antidegradation policy consistent with federal requirements. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16 (“Statement of Policy with Respect to Maintaining High Quality of Waters in California”). Where the federal antidegradation policy is applicable, the State Water Board has interpreted Resolution No. 68-16 to incorporate the federal antidegradation policy.⁶⁷ The Basin Plan implements both the State and federal antidegradation policies. A permitted discharge must be consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16. These policies require that

⁶⁷ State Water Board Order WQ 86-17 (Fay), pp. 16-19.

high quality waters be maintained unless degradation is justified based on specific findings. The Water Board finds that the permitted discharges authorized by this Order are consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16, as set forth herein.

In the context of this Order, a federal NPDES permit, compliance with the federal antidegradation policy requires consideration of the following. First, the Water Board must ensure that “existing instream uses and the level of water quality necessary to protect the existing uses” are maintained and protected.⁶⁸ Second, if the baseline quality of a waterbody for a given constituent “exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected” through the requirements of the Order unless the Water Board makes findings that: (1) any lowering of the water quality is “necessary to accommodate important economic or social development in the area in which the waters are located”; (2) “water quality adequate to protect existing uses fully” is assured; and (3) “the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control” are achieved.⁶⁹ Under this second tier review, the Board may identify the waters for protection through the public process of a permitting action, as it is here. Before allowing any lowering of high quality water, the Board must conduct an analysis of alternatives that evaluates practicable alternatives that would prevent or lessen the degradation associated with the discharges permitted. In the context of 40 CFR § 131.12(a)(2)(ii), practicable means “technologically possible, able to be put into practice, and economically viable.”⁷⁰

The Order must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy.⁷¹ Resolution No. 68-16 requires findings that any lowering of water quality is “consistent with the maximum benefit to the people of the State” and “will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies” and further that the discharge is subject to “waste discharge requirements which will

⁶⁸ 40 CFR § 131.12(a)(1). This provision has been interpreted to mean that, “[i]f baseline water quality is equal to or less than the quality as defined by the water quality objective, water quality shall be maintained or improved to a level that achieves the objectives.” (State Water Board, Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), p. 4.)

⁶⁹ 40 CFR § 131.12(a)(2).

⁷⁰ 40 CFR § 131.3(n).

⁷¹ See State Water Board Order WQ 86-17 (Fay), p. 23, fn. 11.

result in the best practicable treatment or control of the discharge.”⁷² The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting or other regulatory action, such as establishing a water quality objective, that was consistent with the federal and state antidegradation policies.⁷³

Here, the baseline water quality is the level authorized under the previous permit consistent with federal and state antidegradation policies. To the extent some water bodies are high quality waters with regard to some constituents, the Water Board allowed limited degradation of such waters in the Previous Permit. This Order does not authorize lowering water quality as compared to the level of discharge authorized in the Previous Permit such that no antidegradation analysis is required. The Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), provides that no antidegradation analysis is required where the regional water board has no expectation that water quality will be reduced by the permitting action. Nevertheless, the Water Board undertakes herein an antidegradation analysis, assuming, without deciding, that the baseline for antidegradation analysis is the best water quality since 1968.⁷⁴

a. The Board Is Not Required to Make Waterbody by Waterbody and Pollutant by Pollutant Antidegradation Findings:

The Water Board finds that it is not required to conduct a waterbody by waterbody and pollutant by pollutant antidegradation analysis for this Order. The Water Board makes this finding for two reasons. First, APU 90-004, which

⁷² State Water Board Resolution No. 68-16, Resolve 2. Best practicable treatment or control is not defined in Resolution No. 68-16; however, the State Water Board has evaluated what level of treatment or control is technically achievable using “best efforts” (See State Water Board Orders WQ 81-5 (City of Lompoc), WQ 82-5 (Chino Basin Municipal Water District), WQ 90-6 (Environmental Resources Protection Council)). A Questions and Answers document on Resolution No. 68-16 by the State Water Board states as follows: “To evaluate the best practicable treatment or control method, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g. through treatability studies; compare alternative methods of treatment or control; and/or consider the method currently used by the discharger or similarly situated dischargers . . . The costs of the treatment or control should also be considered . . .” (Questions and Answers, Resolution No. 68-16, State Water Board (Feb. 16, 1995), pp. 5-6.).

⁷³ APU 90-004, p.4. The baseline for application of the federal antidegradation policy is 1975, which is the date used in 40 CFR § 131.3(e) to define existing uses of a waterbody. For state antidegradation requirements, see also *Asociacion de Gente Unida por el Agua (AGUA) v. Central Valley Water Board* (2012) 210 Cal.App.4th 1255,1270. The baseline for the application of the state antidegradation policy is generally the highest water quality achieved since 1968, the year the policy was adopted.

⁷⁴ For ease of analyses, 1968 is used herein. As stated above, a permitting action with appropriate antidegradation findings allowing degradation may establish a new baseline, as occurred under the Previous Permit. In addition, the appropriate baseline is determined by the date on which a policy establishing the level of water quality to protect was effective (Resolution No. 68-16, Resolve 1.). The Basin Plan has been updated and amended several times since it was first adopted to include new or revised water quality objectives.

specifies a waterbody by waterbody and pollutant by pollutant analysis for some permitting actions, does not address permitting for diffuse MS4 discharges. Second, APU 90-004 itself indicates that a waterbody by waterbody and pollutant by pollutant analysis is only required when conducting a “complete” antidegradation analysis; a complete analysis is not required where any reduction in water quality is temporally limited and would not result in any long-term deleterious effects on water quality.”⁷⁵ Here, the Order requires compliance with the non-stormwater discharge prohibition, receiving water limitations, TMDL requirements designed to bring MS4 discharges and receiving waters into compliance with water quality objectives, and other requirements for pollutants of concern. The discussion below elaborates on these two reasons.

- i. APU 90-004 is a State Water Board internal guidance document establishing methods for implementing the federal and state antidegradation policies in NPDES permits. APU 90-004 suggests that an antidegradation analysis requires a pollutant by pollutant and waterbody by waterbody analysis in certain contexts, specifically where the discharge at issue is a discrete discharge from a singular facility. However, APU 90-004 has limited value when considering antidegradation in the context of MS4 discharges from diffuse sources, conveyed through multiple outfalls, with multiple pollutants impacting multiple water bodies within region.⁷⁶ This interpretation is sensible for this Order, given that reliable data on the baseline water quality is not readily available since 1968 for a region that spans about 4,600 square miles, including hundreds of miles of coastline, hundreds of rivers and streams, tens of thousands of acres of wetlands, lakes, and impoundments, and the 1,600-square-mile San Francisco Bay Estuary. The Water Board estimates that there are thousands or tens of thousands of combinations of waterbodies and pollutants that could potentially require individual consideration in the Region.⁷⁷ The antidegradation analysis for

⁷⁵ APU 90-004, p. 2.

⁷⁶ The State Water Board held so in Order WQ 2021-0052-EXEC. In *Natural Resources Defense Council v. State Water Resources Control Board*, the superior court did not invalidate this particular conclusion. (Super. Ct. Los Angeles County, No. BS156962, Order, March 29, 2021). The State Water Board’s interpretation of its own guidance is entitled to deference. See also State Water Board Order WQ 2018-0002, p. 77 (reaching the same conclusion for agricultural discharges).

⁷⁷ See Basin Plan Chapter 2, Beneficial Uses; Surface Water Body Beneficial Use Tables at: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/amendments/WaterBodies/Documt%20tables%20FINAL%20new%20cover%20BOOKMARKS%204-6-2012.pdf; and Chapter 3, Water Quality Objectives. While the Basin Plan designates beneficial uses for many waterbodies in the Region, there are thousands or tens of thousands of water bodies (e.g., headwaters creeks, isolated seasonal wetlands, seeps, and ponds) for which beneficial uses have not been specifically designated. Thus, the number of potential combinations of waterbodies and pollutants that could require individual consideration could be substantially higher than estimated here. If it could be done at all, a waterbody by waterbody antidegradation analysis would be extremely time-consuming and take years to complete.

this Order instead relies on a general assessment of the existing water quality data that is reasonably available and makes findings regarding the social and economic benefits and costs of permitting stormwater and non-stormwater MS4 discharges in accordance with the Order terms.

- ii. The Water Board additionally finds that even if APU 90-004 applies to the issuance of this Order, it requires at most a “simple” antidegradation analysis. APU 90-004 contemplates that a “simple” antidegradation analysis is appropriate under specified circumstances. In particular, as stated above, APU 90-004 states that a simple antidegradation analysis is allowed when a “Regional Board determines the reduction in water quality is temporally limited and will not result in any long-term deleterious effects on water quality” or where a “Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of water quality.”⁷⁸ Here, the Order continues the requirements of the Previous Permit or imposes equivalent or more protective requirements such that the water quality established under the prior permit is expected to be maintained and improved. Generally, the Previous Permit instituted controls such as a prohibition on non-stormwater discharges that are a source of pollutants through the MS4s, receiving water limitations, WQBELs based on TMDLs, and monitoring programs to help ensure that water quality will be maintained at the level it is now, or improve it, and this new Order institutes further controls. Any degradation permitted while controls are continuing to be implemented and refined will be temporally limited and will not result in any long-term deleterious effects on water quality.⁷⁹ Such a finding would not be appropriate if, for example, the Order declined to require long-term compliance with water quality objectives, but that is not the case here.

APU 90-004 does not provide guidance on the scope and content of a simple antidegradation analysis. The Water Board determines that the findings made below meet the requirements of a simple antidegradation analysis and are also consistent with an antidegradation analysis done at a generalized level, as appropriate for this Order. With these findings, based on the information available to it and using its best professional judgment, the Water Board concludes that the discharge will not be adverse to the intent and purpose of the State and federal antidegradation policies.

⁷⁸ APU 90-004, p. 2. In an unpublished decision, the Second District Court of Appeal affirmed that a simple antidegradation analysis applied to the 2012 Los Angeles County MS4 permit (*Natural Resources Defense Council v. State Water Resources Control Board* (2018) 2018 WL 6735201, at *6).

⁷⁹ The Order’s requirements put the Permittees on a path to achieving TMDL wasteload allocations for impairing pollutants and meet water quality objectives, consistent with what the TMDL implementation schedules established as feasible and appropriate. For impairing pollutants like trash for which there is no TMDL, the Order requires 100 percent trash load reduction or no adverse impact to receiving waters from trash within the term of the Order.

b. The Water Board Makes the Following Antidegradation Findings:

The discharges permitted in the Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution No. 68-16. The Water Board's conclusion is based on the following analysis.

i. Water bodies that do not meet water quality objectives (water bodies that are not high quality):

Many of the waters within the area covered by this Order are impaired by multiple pollutants discharged through MS4s and are not high quality waters with respect to these pollutants. They are not attaining water quality objectives necessary to protect beneficial uses. This is evidenced in part by the fact that many of these waterbodies are listed on the State's CWA section 303(d) List of impaired waters and the Water Board has established numerous TMDLs to address many of the impairments.⁸⁰ Under both federal and state antidegradation policies, these receiving waters are not considered "high quality" waters for these pollutants. In most cases, there are insufficient data to determine whether the waters addressed by this Order were impaired as early as 1968, but limited available data shows impairment dating back for more than several decades.⁸¹

For receiving waters that are not high quality waters, the federal antidegradation policy requires that regulatory actions ensure that existing instream uses and the level of water quality necessary to protect the existing uses is maintained and protected (40 CFR § 131.12(a)(1)). The Order ensures that existing instream (beneficial) uses and the level of water quality necessary to protect the existing uses is maintained and protected through requirements to not cause or contribute to exceedances of water quality

⁸⁰ It should be noted that impaired waters, or waters that are not high quality, are not confined to those listed only on the 303(d) List. There are several reasons for this, including, but not limited to, the fact that the Water Board's ability to comprehensively evaluate the water quality of each of the substantial numbers of waterbodies and waterbody segments within the Region's 4,600 square miles is limited by available staff resources and data sufficient to justify a 303(d) listing. Accordingly, the 303(d) List itself does not reflect all of the waterbodies in the Region that are impaired or fail to meet water quality standards.

⁸¹ For example, the 1975 Water Quality Control Plan San Francisco Bay Basin Part II points to poor water quality in the Bay for numerous parameters. (See p. 14-5 to 14-18.) There was, among other problems, widespread toxicity, heavy metals, periodic fish kills, and low dissolved oxygen. (*Ibid.*) The South Bay had some of the poorest bacteriological quality, with a mean coliform concentration of 20,000 MPN/ml (the then-water quality objective for total coliform for contact recreation was 240 MPN/ml). (*Id.*, p. 14-9; 1975 Water Quality Control Plan San Francisco Bay Basin Abstract, p. 21.)

objectives in the receiving water and to restore impaired water bodies.⁸² This is achieved through the following provisions:

- (1) The Order requires compliance with receiving water limitations to meet water quality standards in the receiving water through timely implementation of control measures and other actions specified in Provisions C.2 through C.24. The Order requires implementation of specific structural and non-structural stormwater and non-stormwater controls, consistent with TMDL implementation plans, including an adaptive implementation strategy, that are demonstrated to have a reasonable assurance of achieving compliance with receiving water limitations and that must be implemented in accordance with the deadlines set forth in the Permit.
- (2) The Order requires Permittees to comply with WQBELs and/or receiving water limitations consistent with the assumptions and requirements of TMDL WLAs assigned to MS4 discharges established in TMDLs to restore water quality sufficient to protect the beneficial uses of the impaired water bodies.
- (3) The Order requires Permittees to effectively prohibit non-stormwater discharges that are a source of pollutants through the MS4 to receiving waters.
- (4) The Order includes requirements for monitoring and reporting designed to identify pollutants in receiving waters and the effectiveness of implemented measures to meet water quality objectives.

These provisions are collectively designed to halt any further degradation of impaired water bodies and improve the quality of such waters to a level protective of existing uses over a time schedule that is as short as possible. The antidegradation policies do not explicitly or implicitly override the authority and discretion the Clean Water Act and the Water Code grant to the Water Board as to how it structures a permit to ensure water quality necessary to protect beneficial uses. The law does not require immediate restoration of impaired water bodies nor does it require an immediate prohibition of discharges that contribute to an exceedance in the waterbody. Rather, federal regulations at 40 CFR section 122.47 allow NPDES permits, including MS4 permits, to have compliance schedules. Similarly, Water Code section 13263, subdivision (c), authorizes the Water Board to include a time schedule for achieving water quality objectives in waste discharge requirements. Where a TMDL has been established, CWC section 13242

⁸² These actions also ensure that discharges will not unreasonably affect present and anticipated beneficial uses and will not result in water quality less than water quality objectives, as required by Resolution No. 68-16.

states that the TMDL implementation plan, as incorporated into the water quality control plan, shall include a time schedule for actions to be taken. When issuing waste discharge requirements, CWC section 13263 requires regional boards to implement any relevant water quality control plans that have been adopted. Certainly, water quality objectives must be achieved; but the law, as cited above, recognizes and allows for the fact that it can take time to restore or achieve the objectives.⁸³ This period of time before improvement may be as long as multiple years. This is not contrary to the authorities for compliance schedules stated above and is not contrary to the antidegradation policies.⁸⁴

ii. High quality water bodies:

Some of the waterbodies within the area covered by the Order may be high quality waters with regard to some pollutants. Some of these waterbodies may be currently high quality as compared to currently applicable objectives. Others of these waterbodies may be currently impaired, but may be classified as high quality waters because they were historically high quality for certain pollutants. MS4 discharges of stormwater and non-stormwater into such water bodies may have resulted in lowering of the quality of the water bodies since 1968 with regard to the pollutants in the discharge.

For high quality water bodies,⁸⁵ the Water Board finds as follows:

⁸³ Additionally, while MS4 permits must include a technology-based standard of effectively prohibiting non-storm water discharges through the MS4 and reducing pollutants in the discharge to the MEP, requiring strict compliance with water quality standards (e.g., by requiring immediate compliance with receiving water limitations or water quality based effluent limitations) is at the discretion of the permitting agency (33 U.S.C. § 1342(p)(3)(B); *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166-67). This Order imposes water quality-based effluent limitations to implement TMDL WLAs and requires compliance with receiving water limitations for all constituents in the MS4 discharges. The fact that the Board also allows reasonable time schedules to achieve compliance with the effluent limitations and receiving water limitations is not contrary to the law for this additional reason.

⁸⁴ With regard to waterbodies that are not high quality, the antidegradation policies do not require socioeconomic findings justifying any continued degradation of such waterbodies that may occur while the Permittees implement requirements in accordance with a compliance schedule. Even if such findings were required, the Water Board finds that this potential, limited, and temporary further lowering of water quality is justified for the same reasons articulated below related to high quality water bodies.

⁸⁵ The quality of some currently high quality waters that are close to or at objectives may degrade below water quality objectives temporarily while Permittees implement appropriate controls in accordance with the compliance schedules in the Order and some historically high quality waters may stagnate or continue to degrade below water quality objectives during the same period. The Water Board finds that the potential, limited, and temporary lowering of water quality below the objectives is authorized by 40 CFR § 122.47 and the time schedule provisions of the Water Code set out above in the subsection entitled "Water bodies that do not meet the water quality objectives (water bodies that are not high quality)", and, to the extent any findings are required under the antidegradation policies, is justified for the same reasons articulated in this subsection entitled "High quality water bodies."

- (1) Practicable Alternatives: The Water Board has evaluated a range of practicable alternatives that would prevent or lessen any degradation associated with permitted MS4 discharges to high quality waters. These alternatives are discussed below.
 - (a) Alternative 1 - Complete prohibition on some or all pollutants in MS4 non-stormwater discharges to high quality waters: This alternative would prohibit MS4 discharges of some or all pollutants in non-stormwater to high quality receiving waters. By eliminating these discharges, pollutants from non-stormwater discharges would not reach high quality receiving waters during dry weather and thus not cause any degradation. In high quality water areas, this alternative could require the Permittees to either divert all non-stormwater to a facility for treatment, or retain all non-stormwater through retention basins, infiltration galleries, and other controls that would prevent non-stormwater from reaching surface waters through storage, infiltration, or reuse. Alternatively, Permittees could install specific pollutant control measures that prevent specific pollutants from being discharged through the MS4.
 - (b) Alternative 2 – Complete prohibition on some or all pollutants in MS4 stormwater discharges to high quality waters: This alternative would prohibit MS4 discharges of some or all pollutants in stormwater to high quality receiving waters. By eliminating these discharges, pollutants from stormwater would not reach high quality receiving waters during wet weather and not cause any degradation. As wet weather will always occur, this alternative could require the permittees to either divert all stormwater in the MS4 to a facility for treatment, or retain all stormwater through retention basins, infiltration galleries, and other controls that would prevent stormwater from reaching surface waters through storage, infiltration, or reuse. Permittees could also install pollutant control measures that are specific to preventing specific pollutants from being discharged through the MS4.
 - (c) Alternative 3 – Implement controls consistent with Permit requirements, applicable TMDL Implementation Plans, and adaptive management. This alternative would require Permittees to implement a mix of structural and non-structural controls and associated actions sufficient to achieve receiving water limitations, WQBELs, and other requirements, with flexibility to allow implementation of controls that are relatively more effective with respect to pollutant control, feasibility, or cost, while still achieving

required outcomes. Alternative 3 includes, or may include, controls that could be implemented under Alternatives 1 and 2.

(i) Alternative 3, Option A:

Under Alternative 3, where requirements and controls reflect those established in applicable TMDLs, the controls would constitute compliance with receiving water limitations for the waterbody-pollutant combinations addressed by the relevant TMDL, but Option A would not allow for implementation of control measures to constitute compliance with receiving water limitations for waterbody-pollutant combinations not addressed by a TMDL.

(ii) Alternative 3, Option B:

Option B would add one component to Alternative 3. Under Option B, implementation of the controls would additionally constitute compliance with receiving water limitations for a narrow set of waterbody-pollutant combinations not subject to a TMDL where the pollutant of concern is addressed in a comparable TMDL applicable to other water bodies and the controls reflect the controls and timeline of the comparable TMDL.

(d) Alternative 4 – Establish WQBELs for MS4 discharges to high quality waters: This alternative includes the Board establishing WQBELs for MS4 discharges of certain pollutants to high quality waters. These WQBELs would apply to both stormwater and non-stormwater discharges. MRP 2 only includes WQBELs where they are based on either TMDL wasteload allocations applicable to MS4 discharges (i.e., for impaired waters and not high quality waters) or the trash provisions in the Ocean Plan and ISWEBE. This alternative would require the Board to establish WQBELs where no TMDLs have been established.

(2) Economic and Social Development Considerations and Consistency with Maximum Benefit to the People of the State: The Water Board incorporated Alternative 3, Option B, and included aspects of Alternatives 1 and 2, into the Permit. This alternative could allow limited degradation of high quality water bodies by MS4 discharges, but ultimately requires MS4 discharges to meet and not fall below water quality standards.

Such degradation of high quality waters is necessary to accommodate important economic or social development in the area and is consistent

with the maximum benefit to the people of the state for the following reasons:

- (a) Alternatives 1 and 2, if implemented as full prohibitions, would hamper important social and economic development.
 - (i) The MS4 discharges of stormwater and non-stormwater in certain circumstances are to the maximum benefit to the people of the state because they may be necessary for flood control and public safety. MS4 discharges also can assist with maintaining, or comprise the flows necessary to maintain, instream flows that support beneficial uses.⁸⁶ In addition, complete diversion or retention of MS4 discharges that would reach the MS4 and receiving water would require extensive structural controls that are not technologically feasible in many locations, for example due to: lack of available space at those sites; soils with limited infiltration capacity or landslide proclivity; challenging topography; conflicts with utilities and existing infrastructure; lack of available sanitary sewer collection system connections or capacity; typical Bay Area MS4 system designs, which involve relatively short runs of storm drain that discharge into local creeks, streams, or the Bay. That system would require substantial replumbing, often against available grades, to direct flows to controls or the sanitary sewer system.⁸⁷

⁸⁶ The Permittees' MS4 systems are frequently relatively short, discharging into headwaters or low-order creeks and providing all or substantial portions of those creeks' flows. Diversion of flows to the sanitary sewer could substantially reduce flows, impacting beneficial uses, including associated riparian habitat and vegetation. While use of infiltration basins could recharge local groundwater, beneficially increasing creek baseflows, that benefit is likely to be most-pronounced in the limited areas of Bay Area soils that are more infiltrative, and less so in the majority of the Bay Area that is comprised of less-infiltrative C and D soils. In an example in the Los Angeles Region, the Los Angeles River Flows Project studied the impacts of reduced flows on beneficial uses in the Los Angeles River as a pilot application of the California Environmental Flows Framework. At the beginning of this project, Los Angeles Water Board staff presented on the importance of minimum flows for recreation and wildlife in both concrete and soft-bottom channels of the river (https://www.waterboards.ca.gov/water_issues/programs/docs/lar/002_r4_la_river_info_item_20171103rev.pdf) Wading shorebirds, for example, rest and feed in the shallow waters of the concrete lined portion of the lower Los Angeles River. The final report for the project, "Process and Decision Support Tools for Evaluating Flow Management Targets to Support Aquatic Life and Recreational Beneficial Uses of the Los Angeles River," quantified the flow ranges associated with different species, habitats, and recreational uses in the river and evaluated the impacts of various combinations of reductions in wastewater, stormwater, and non-stormwater discharges. In general, if all discharges were eliminated, there would not be enough flow to protect beneficial uses including habitat for local plant and animal species.

⁸⁷ E.g., SCVURPPP, August 2019. *Santa Clara Basin Stormwater Resource Plan*; CCAG, January 2021. *San Mateo Countywide Sustainable Streets Master Plan*, App. B, pp. 27-28.

- (ii) The vast majority of the Permittees are cities and counties that provide essential and valuable public services. This Fact Sheet considers economics, including Permittees' compliance costs associated with meeting the requirements of the Order. Controlling storm water discharges to the point that there is no potential degradation of any potentially high quality waters by requiring complete diversion or retention would be an enormous opportunity cost that could preclude MS4 permittees from spending substantial funds on other important social and economic needs. This may manifest itself in the reduction of some public services or prevent other public services from being provided in the first place. Permittees have previously provided public comments (on the Administrative Draft of the Permit and during consideration of MRP 2) that spending limited municipal resources on immediately addressing all pollutants in MS4 discharges (all stormwater and non-stormwater discharges) will adversely impact municipal budgets, public health priorities, such as implementing active transportation projects including Safe Routes to Schools or measures to reduce unsheltered homelessness, such as provision of housing and supportive services, and other social services.⁸⁸
- (iii) As another example, unsheltered homelessness, in a context of limited municipal budgets, the high Bay Area cost of living, driven in part by local land use planning decisions that have produced insufficient affordable housing, and limited supportive services, results in substantial public expenditures including emergency medical care, and police and justice system engagement.⁸⁹ Those public expenditures can be significant, without reducing unsheltered homelessness or preventing discharges of trash and human waste associated with it. Municipal efforts to provide affordable housing, supportive services, and related needs, while expensive, can

⁸⁸ For example, in comments on the February 2021 Administrative Draft of the Permit, many Permittees identified that limited resources are available to protect water quality, and some Permittees expressed concern that Permit requirements could lead to a reduction in needed road maintenance (Santa Clara Valley Urban Runoff Pollution Protection Program comment letter of April 8, 2021) or reduced implementation of active transportation (multi-modal) projects (City of San Pablo comment letter of April 6, 2021, Town of Danville comment letter of April 7, 2021), and that a focus on addressing the water quality impacts associated with unsheltered homelessness could reduce resources used for housing or provision of supportive services (Contra Costa Countywide Clean Water Program letter of April 8, 2021), and that fiscal impacts associated with the COVID-19 pandemic emphasized the need to prioritize certain actions to protect water quality (e.g., Alameda Countywide Clean Water Program comment letter of April 8, 2021).

⁸⁹ Flaming et al., 2015. *Home Not Found: The Cost of Homelessness in Silicon Valley*.

be relatively much less expensive than jail and emergency services. In addition, by reducing homelessness, they have the potential to reduce associated discharges of trash and human waste. Alternatives 1 and 2, by prohibiting non-stormwater or stormwater discharges, respectively, would preclude this kind of equivalent benefit weighing analysis and the more-efficient achievement of water quality goals.

The Los Angeles Water Board conducted an analysis that estimates the equivalent public benefit that may be provided through affordable housing and services if full retention and diversion were not required under Region's MS4 permit. The results of the analysis support the finding that the social and economic benefits of a society where there would be significantly fewer unhoused residents would be far greater than the additional benefits created by taking water quality from the point where water quality standards are achieved to a level of higher quality that may only be achieved with full retention.⁹⁰ The same funds that would have to be used to

⁹⁰ In 2012, Los Angeles County projected that it would cost \$120B, or \$134.8B in 2019 dollars, for complete diversion or retention of MS4 discharges, whereas the cost of implementing enhanced watershed management programs (EWMPs), which require addressing the 85th percentile, 24-hour storm event or otherwise reducing or treating stormwater discharges to attain water quality standards, was estimated by Board staff to be \$21.0B - \$21.3B (see Section XIII, Economic Considerations). Instead of using this cost differential of \$113.5B - \$113.8B to further improve waters that would already have achieved water quality standards, thereby already being able to support designated beneficial uses, this money could be better spent addressing the homeless problem in the region. In 2020, there were an estimated 66,436 unhoused residents in Los Angeles County (Los Angeles Homeless Services Authority. 2021. 2020 Greater Los Angeles Homeless Count – Total Point-In-Time Homeless Population by Geographic Areas. <https://www.lahsa.org/documents?id=4692-2020-greater-los-angeles-homeless-count-total-point-in-time-homeless-population-by-geographic-areas.pdf>). The median cost in Los Angeles County of constructing a permanent housing unit for the homeless is about \$531,000 (Galperin, Ron. 2019. The High Cost of Homeless Housing: Review of Proposition HHH. Ron Galperin LA Controller. <https://lacontroller.org/audits-and-reports/high-cost-of-homeless-housing-hhh/>). Supportive services to address the homeless housing gap were estimated in 2016 to be \$428.8M per year, or \$455.3M in 2019 dollars (Los Angeles Homeless Services Authority. 2016. Report on Homeless Housing Gaps in the County of Los Angeles. <https://homeless.lacounty.gov/wp-content/uploads/2019/02/Report-on-Homeless-Housing-Gaps-in-the-County-of-Los-Angeles-1-2016-1....pdf>). Adjusting for the increase in the homeless population since then yields an estimated annual cost in supportive services of \$1.2B in 2019 dollars. (Assuming the same supportive services cost per person estimated in 2016, multiplied by the number of homeless residents in LA County in 2020.) The stormwater capture cost differential could build enough units to house every homeless person in Los Angeles County and pay for supportive services for the next 67 years, even with the conservative assumption of one person per housing unit. Housing a homeless person in Los Angeles County results in average cost savings of about \$2,731 per person per month in 2019 dollars in terms of reduced need for public services, such as medical and policing expenses (Economic Roundtable. 2008. Where We Sleep: Costs when Homeless and Housed in Los Angeles. https://economicrt.org/wp-content/uploads/2009/11/Where_We_Sleep_2009.pdf). This means that there

prevent all MS4 discharges (as opposed to only 85 percent of those discharges) could be invested instead in addressing homelessness, and could support affordable housing and several decades of supportive services for a significant number of residents at-risk of being unhoused. The Bay Area faces similar challenges and drivers associated with unsheltered homelessness, as well as similar costs associated with pollution control. Permittees are currently facing the kinds of tradeoffs described above because they are implementing a range of measures to address unsheltered homelessness as described in the Fact Sheet section for Provision C.17, and which provide an indirect benefit to water quality, including provision of permanent supportive housing, job programs, and services. Those are in addition to measures, like trash collection and provision of sanitary waste services, that provide a direct water quality benefit. As a result, the Los Angeles Regional Water Board's conclusion is expected to be generally applicable to the Bay Area.

- (iv) The prohibition on discharges of pollutants in Alternatives 1 and 2 is not practicable without substantial diversion to the sanitary sewer. Stormwater BMPs that do not fully retain, evapotranspire, and/or infiltrate all flows into the groundwater generally will discharge low, but non-zero, amounts of pollutants downstream.⁹¹ Those kinds of controls (e.g., bioretention cells, flow-through planters) are common in the Bay Area because of the preponderance of Bay Area soils with

would be annual cost savings of about \$2.2B from housing all homeless residents in Los Angeles County, and over 67 years the cost savings would be about \$145.1B-\$145.8B, greater than the storm water capture cost differential of \$113.5B-\$113.8B. An analysis of Ventura County finds similar results where each of its 1,743 unhoused residents could be provided permanent housing for at least 55 years with its stormwater capture cost differential, assuming that Ventura County's cost of full capture would be their estimated MS4 compliance costs multiplied by the same ratios of Los Angeles County's E/WMP costs to cost of full stormwater capture, yielding cost differentials ranging from \$2.5B-\$23.4B (<https://www.vcstar.com/story/news/2020/12/12/covid-ventura-county-continuum-of-care-2021-homeless-count/3868785001/>). This analysis was also based on an average cost per unit of \$480,000 for housing the homeless in Ventura County in 2019 and the same supportive services cost per person as in LA County (<https://humanimpact.org/wp-content/uploads/2020/10/HIP-Ventura-County-Lets-Invest-Sources-2020.pdf>). It can be expected that there would be substantial additional benefits for these housed residents and for the local economy from being more fully able to engage in society.

A similar opportunities analysis for unsheltered homeless populations in the South San Francisco Bay Area can be found in Flaming et al., 2015. *Home Not Found: The Cost of Homelessness in Silicon Valley*.

⁹¹ Clary, et al., 2020. *International Stormwater BMP Database: Summary Statistics*. Water Research Foundation.

limited infiltration rates. As such, they would not achieve the Alternative 1 or 2 goals.

- (v) The significantly higher cost of complete storm water diversion or retention could lead to increased fees for residents with little benefit in return after water quality standards have been met. To achieve retention, stormwater control sizes would need to increase substantially over the post-construction stormwater treatment control sizing in Provision C.3.d. That sizing is based on work by Urbonas and Guo that determined a point of diminishing returns for control sizing. That work found that, while larger controls could control larger storms, the size increased out of proportion to the declining marginal benefit gained, in part because of the need to capture the larger storms that are relatively infrequent and comprise a relatively small portion of average annual rainfall. As noted above, storm water diversion would require substantial replumbing of existing systems.

The literature is sparse on the impact of MS4 project costs on user fees, but Kea et al. (2016) found higher rates of user fee establishment in the years directly before and after MS4 permit deadlines,⁹² indicating that utilities often rely on user fees to meet permit requirements.

It is also possible that higher costs could be passed down to residents through increased housing prices driven by higher impact fees, which cities often charge developers to help fund public services, or higher construction costs. The literature finds that overall impact fees lead to higher home prices.⁹³ Requiring complete storm water diversion or retention from properties could also lead to higher construction costs for

⁹² Kea, Kandace, Randel Dymond, Warren Campbell. 2016. An Analysis of Patterns and Trends in United States Stormwater Utility. *Journal of the American Water Resources Association*, 52(6). See, also, Comment Letter on 2012 Los Angeles MS4 Permit from City of Lakewood, Lisa A. Rapp, Director of Public Works, July 23, 2012, Comment Letter from City of La Verne, Daniel W. Keeseey, Director of Public Works, July 23, 2012, and Comment Letter from LA Permit Group, July 23, 2012 (discussing the need to, and difficulty of, levying additional special taxes to pay for the permit).

⁹³ Mathur, Shishir, Paul Waddell, and Hilda Blanco. 2004. The Effect of Impact Fees on the Price of New Single-family Housing. *Urban Studies*, 41(7); Ihlanfeldt, Keith R. and Timothy M. Shaughnessy. 2004. An empirical investigation of the effects of impact fees on housing and land markets. *Regional Science and Urban Economics*, 34(6); Mathur, Shishir. 2013. Do All Impact Fees Affect Housing Prices the Same? *Journal of Planning Education and Research*, 33(4).

housing, which is one of the drivers of higher home prices.⁹⁴ There is extensive literature showing that higher housing prices are associated with proximity to cleaner waterbodies,⁹⁵ which provide benefits to society. However, higher housing prices driven by higher impact fees or construction costs that do not contribute toward discernible improvements in water quality would likely provide lower marginal benefits compared to a scenario where residents could avoid additional housing costs by not having to pay higher impact fees or construction costs in a region where housing costs are already high, or a scenario where this cost could be spent on more pressing public services or societal problems.

- (vi) Because waterbodies may be high quality for some pollutants and not others it is difficult, if not impossible, to designate specific areas as high quality waters. As a result, Alternatives 1 and 2 are inconsistent with achieving the maximum benefit to the people of the state because they may require broader-than-necessary implementation of measures to ensure their prohibitions are met. The inconsistency stems from potential impacts to other municipal and public services associated with those increased expenditures.
- (b) Aspects of Alternatives 1 and 2 that are practicable are part of Alternative 3 and have been incorporated into this Order. The Order generally implements a prohibition on trash discharges through the installation of full capture systems or controls to achieve full capture equivalency. The Order also largely prohibits the discharge of non-stormwater into and through the MS4 to receiving waters. While there are some limited exceptions where the non-stormwater discharge is expected not to be a source of pollutants, where the discharge is determined to be a source of pollutants it must be prohibited. The Order, through its green infrastructure planning and implementation provision (Provision C.3.j) and its alternative compliance provision (Provision C.3.e), also supports efforts to maximize the capture of stormwater through retention basins, infiltration galleries, and other controls.

⁹⁴ Emmons, William R. 2019, Sept. 5. Construction Costs, Not Another Housing Bubble, Are Driving House Prices Higher. St. Louis Fed On the Economy Blog. <https://www.stlouisfed.org/on-the-economy/2019/september/construction-costs-housing-bubble-driving-housing-prices-higher>

⁹⁵ See, e.g., Guignet, Dennis, Matthew T. Heberling, Michael Papenfus, Olivia Griot, and Ben Holland. 2020. Property values, water quality, and benefit transfer: A nationwide meta-analysis. Working Papers 20-04, Department of Economics, Appalachian State University. <https://ideas.repec.org/p/apl/wpaper/20-04.html>

- (c) Alternative 3, if implemented, could result in limited degradation of high quality water bodies. Any degradation that would occur under the alternative is consistent with the maximum benefit to the people of the state because the combination of structural and non-structural controls implemented under the alternative will ultimately be effective at maintaining and restoring water quality protective of beneficial uses, and allow a greater benefit to the people of the state than full prohibitions of discharge when considering social and economic parameters that could be affected, such as employment, housing, community services, income, tax revenues, and land value.

The Permit terms require implementation of objective technical solutions that must be designed to meet the Permit's maximum extent practicable- or water quality standards-based regulatory standards. Such controls necessarily take time to design and construct, but it is to the maximum benefit of the people of the state that such controls be designed and implemented properly so as to be protective of water quality in the long run. These measures that control impacts from stormwater and non-stormwater discharges in the Order are typically effective across multiple pollutants. The alternatives would concurrently address other constituents of concern that may not be causing impairment, but may still be leading to degradation, resulting in improvements in levels of all pollutants, including those for which the receiving water may be high quality.

- (d) Alternative 3 avoids the high economic and social costs associated with decreased public services associated with Alternatives 1 and 2. At the same time, Alternative 3 is still structured to encourage retention of stormwater and non-stormwater. As incorporated into the Permit, Alternative 3 provides additional economic and social benefits to the people of the state by incentivizing and incorporating multi-benefit and green infrastructure projects that include benefits beyond water quality protection such as increased local water supplies, beautified streets, plazas, and parking areas, facilities that support habitat and recreation, and climate change resiliency, such as reduced flood flows and reduced temperatures on the urban surface. For example, both the regional stormwater treatment wetland in the City of Fremont's Pacific Commons project and the stormwater pond in the city park downhill of the City of Dublin's Dublin Ranch protect clean water while providing an opportunity for recreation and urban connections with nature. Bioretention cells along streets and in parking lots can reduce the urban heat island

effect, help calm traffic, and protect cyclists and pedestrians, increasing the benefit of active transportation designs.

Multi-benefit projects are projects that provide multiple benefits, which may include not just runoff treatment, but water capture and use, climate change resilience, encouragement of active transportation and protection of multi-modal users, greenhouse gas reductions, and improvements to urban quality of life— are actively encouraged by the State of California, which administers Proposition 1 funds (\$200 million in grant funds) for such multi-benefit projects. In the Bay Area, such projects have received funding through Proposition 1 and other state and federal grant programs, as well as Caltrans, pursuant to requirements of its statewide MS4 NPDES permit, and through its cooperative funding program for projects that also provide benefit for discharges from Caltrans rights of way. For example, the Rumrill Boulevard green street retrofit in San Pablo, which will control pollutants of concern, improve pedestrian safety, and provide climate change resilience.⁹⁶ Table A-3 provides further examples of multi-benefit grant-funded projects completed by the Permittees. While Prop 1 funding has been expended, construction of multi-benefit projects from Permittee Green Infrastructure Plans and Stormwater Resource Plans will likely qualify for these types of grant monies in the future. Additionally, the construction of these projects also creates good-paying jobs that do not require advanced degrees, accessible to those in disadvantaged communities.⁹⁷

Capacity-building projects are projects that build Permittee understanding of and the allow for planning or increase the toolbox of measures available to address pollutants in MS4 discharges. As shown in Table A-3, funded projects have included the

⁹⁶ U.S. EPA, *Rumrill Boulevard: Complete Green Street* (web). Accessed August 2, 2021.

<https://www.epa.gov/sfbay-delta/rumrill-boulevard-complete-green-street>

City of San Pablo, *Rumrill Boulevard Complete Streets Project* (web). Accessed August 2, 2021.

<https://www.sanpabloca.gov/2590/Rumrill-Boulevard-Complete-Streets-Proje>

⁹⁷ Sustainable Business Network, May 2021. *Green Stormwater Infrastructure (GSI): A tool for economic recovery and Growth in Pennsylvania*, reviewed ten years of GSI implementation in Pennsylvania, and found that GSI was supporting 34,000 jobs in Philadelphia, with more than half paying at least \$15 per hour, even without requiring a high school diploma. Building on the findings by Economic Roundtable, Los Angeles Alliance for a New Economy estimated that over 30 years, the Safe, Clean Water Program (Measure W) in the Los Angeles Water Board region will create about 6,530 construction jobs and 1,347 O&M jobs, as well as about 1,559 annual indirect and induced jobs. This would yield about \$14B in overall regional economic benefits from \$9B in investment. Furthermore, many of these jobs created would be good-paying jobs that do not require an advanced degree, accessible to those in disadvantaged communities (Los Angeles Alliance for a New Economy (LAANE). Liquid Assets. How Stormwater Infrastructure Builds Resilience, Health, Jobs, and Equity. March 2018.).

development of Permittee stormwater resource plans, efforts to enact building code changes to support low impact development and green stormwater infrastructure implementation, and the Tracking California's trash project. It is likely that such projects could qualify for funds from similar grant programs in the future.

Table A-3. Multi-benefit and capacity-building grant-funded projects

Grant Program	Permittee	Project	Funded Amount
Prop 84 2011 Stormwater Implementation Grants	San Jose	Park Avenue: Green Avenue Pilot Project	\$859,128
(same)	San Jose	Martha Gardens Green Alleys Pilot Project	\$945,180
(same)	Union City	South Decoto Green Streets Project (Implementing LID)	\$3,000,000
(same)	Alameda County Public Works Agency	Alameda County Public Works Agency Low Impact Development Implementation and Demonstration Project: Parking Lot Stormwater Treatment Improvements	\$1,600,000
Prop 84 2011 Stormwater Planning and Monitoring Grants	Contra Costa County	Bay Area Green Infrastructure Master Planning Project	\$597,901
(same)	Multiple counties in Water Board Regions 2 and 4	Tracking California's Trash	\$870,000
(same)	Statewide	Removing Barriers to LID in Local and State Codes: Technical Assistance for Municipal Code Updates and Evaluation of the California Building Standards Code	\$996,135
Prop 84 2013 Stormwater Implementation Grants	Albany	Brighton Avenue Pilot Green Street Project	\$296,000

Grant Program	Permittee	Project	Funded Amount
(same)	San Jose	Ocala Avenue Green Street Project	\$1,429,355
(same)	Town of San Anselmo	SADPW Stormwater LID Demonstration	\$546,517
(same)	Union City	H Street - Green Street Improvements	\$3,000,000
(same)	Bay Area Rapid Transit District	BART Lafayette Station Parking Lots Improvement Project	\$2,245,259
2014 Drought Response Outreach Program for Schools	StopWaste	DROPS - OPS (Oakland and Piedmont Schools)	\$1,491,503
Prop 1 2016 Stormwater Implementation Grants	City of San Mateo	City of San Mateo Sustainable Streets and Parking Lot	\$630,031
2016 Storm Water - Proposition 1 - Implementation Grants - Round 1	Daly City	Vista Grande Drainage Basin Improvement Project	\$10,000,000
2016 Storm Water - Proposition 1 - Implementation Grants - Round 1	Redwood City	Redwood City Sustainable Streets	\$608,099
2016 Storm Water - Proposition 1 - Planning Grants	Santa Clara County	SWRP for the Santa Clara Basin in Santa Clara County	\$471,708
2016 Storm Water - Proposition 1 - Planning Grants	Contra Costa County Flood Control & Water Conservation District	Contra Costa Watersheds Storm Water Resource Plan	\$499,420

Grant Program	Permittee	Project	Funded Amount
2020 Prop 1 Round 2 Storm Water Grant Program	San Pablo	Sutter Avenue Green Street Project	\$1,560,000

As discussed above, Alternative 3 provides important socioeconomic benefits such as creation of new jobs, increased local water supplies, beautified streets, plazas, and parking areas, and facilities that support habitat and recreation, while allowing the local governments to maintain important public services. This alternative therefore has the greatest chance of success, within the shortest time frame, and furthers the goal of maintaining and achieving water quality standards.

- (e) Alternative 3 could result in limited degradation of high quality waters, in particular currently impaired waters that may nevertheless be considered high quality waters based on a historic baseline. The federal antidegradation policy does not require consideration of economic and social costs associated with degradation; it only requires findings that “allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.” The state antidegradation policy does not define the exact factors that must be considered in determining “maximum benefit to the people of the state.” APU 90-004 states that factors to be considered in a complete antidegradation analysis include economic and social costs of the discharge compared to its benefits, but this Order is subject only to a simple antidegradation analysis.⁹⁸ The Water Board has nevertheless considered the costs associated with water quality degradation that may occur under Alternative 3, but has done so necessarily at a generalized level. Specifically, in choosing Alternative 3, the Water Board finds as follows:
- (i) There are significant environmental, public health, and economic costs associated with exceedances of water quality objectives. The Bay Area economy thrives on a healthy environment, as does the health of its population. By way of

⁹⁸ Outside of the complete antidegradation analysis context, APU 90-004 states only that the “findings should indicate . . . [t]he socioeconomic and public benefits that result from lowered water quality” (APU 90-004, p. 1.).

example, the failure to control stormwater runoff (which would result in exceedances of water quality objectives) would, among other things, negatively impact Bay and ocean water quality, which would negatively impact tourism and the fishing industry. Similarly, the failure to meet water quality objectives in Bay and ocean waters would negatively impact recreation and public health of beachgoers. These costs are discussed in detail in the Economic Analysis section of this Fact Sheet.

- (ii) The considered costs are associated with exceedances of water quality objectives rather than limited degradation of high quality waters to a level that remains better than objectives. This is because the objectives are set to protect beneficial uses in the first place.
- (iii) Where Alternative 3 may allow a currently high quality waterbody to degrade below water quality objectives, or where it will allow a currently impaired, but historically high quality waterbody to stagnate or worsen in quality, even for multiple years, this allowance is for a finite period of time defined by the compliance schedule specified in the Permit. The Water Board finds that the temporary degradation is justified based on the social and economic benefits discussed in these findings, notwithstanding the potential costs of degradation. In particular, the Water Board anticipates that the combination of non-structural controls and structural controls that are designed and built over a longer timeframe are more likely to lead to water quality improvements than other measures.
- (iv) Alternative 3 Option A, as compared to Option B, could potentially avoid some of the costs discussed above if some Permittees are able to correct some exceedances earlier if required to comply immediately with receiving water limitations for all waterbody-pollutant combinations with no applicable TMDL. From a practical perspective, however, the Water Board finds that immediate compliance, particularly for those waters that may have been high quality historically but are not high quality currently, is unrealistic even if required, given the technical and financial constraints faced by Permittees. There are no known specific sources of bacteria that can be controlled immediately. There are also no viable means to control bacteria in discharges by treating discharges. Some stormwater treatment or retention systems may reduce levels of bacteria in discharges, but they cannot be implemented

immediately and there are constraints that affect locating them where they would intercept discharges from bacteria sources, e.g., land availability and underground utilities. Most importantly, even though they may have viability due other benefits, such as control of other pollutants and water supply augmentation using captured stormwater, none are able to reduce levels of bacteria equivalent to water quality objectives.⁹⁹ They also have hydraulic capacity constraints that result in bypassing of untreated runoff during large storm events. Even municipal wastewater treatment systems cannot reduce bacteria to such low levels of bacteria without disinfection of the treated wastewater through chlorination/dichlorination, ozone disinfection, or ultra-violet light disinfection, which are not feasible for episodic stormwater discharges. Since it is unrealistic for Permittees to comply immediately, any costs avoided would be non-existent to minimal. Further, the Permit limits application of Option B to the receiving water limitations for bacteria in water bodies (specifically, Stevens Creek, Calabazas Creek and Sunnyvale East Channel/Guadalupe Slough) receiving discharges from Mountain View and Sunnyvale and monitoring demonstrates that these water bodies are not currently high quality for bacteria.¹⁰⁰

- (f) Regarding Alternative 4, WQBELs are for the most part set to be protective of beneficial uses, which is the floor of the level of protection required under the antidegradation policies and may not be protective of water quality higher than necessary to protect beneficial uses. Therefore, this alternative is not more protective of high quality water bodies than requiring compliance with receiving water limitations, which already require permittees' MS4 discharges to not cause or contribute to exceedances of water quality objectives. This alternative would impose a significant analytical hurdle on development and adoption of a permit by requiring the Water Board to spend extensive efforts to analyze tens or hundreds of thousands of waterbody-pollutant combinations and then further

⁹⁹ Clary et al., 2020. International Stormwater BMP Database: 2020 Summary Statistics. Water Research Foundation, pp. 21-33. Accessed at: https://www.waterrf.org/system/files/resource/2020-11/DRPT-4968_0.pdf

Clary, Pitt, and Steets, August 2014. Pathogens in Urban Stormwater Systems. ASCE. Accessed at: <https://collaborate.ewrinstitute.org/ewri/ourlibrary/viewdocument?DocumentKey=fffe8a76-18b2-4f85-9b54-b0eac23f12a0>

¹⁰⁰ See, e.g., Exhibit A of Baykeeper Notices of Violation and Intent to File Suit Under the Clean Water Act to the cities of Mountain View and Sunnyvale, December 4, 2019.

conduct an infeasible set of reasonable potential analyses to determine whether the permittees' discharges are impacting high quality waters and for what pollutants. Ultimately, the alternative would divert staff resources from oversight of the implementation of potentially more effective and practical permit requirements, as well diverting staff from the Water Board's other programs.

- (3) Requirement for Highest Statutory and Regulatory Requirements and Best Practicable Treatment and Control: The Order requires the highest statutory and regulatory requirements and requires that the Permittees meet best practicable treatment or control.
 - (a) The Order prohibits all non-stormwater discharges, with a few enumerated exceptions, through the MS4 to all receiving waters.
 - (b) The Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p)(3)(B)(iii) and implement control measures under the program elements of a stormwater management program.
 - (c) As required by CWA section 402(p)(3)(B)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), the Permittees must comply with applicable WQBELs based on TMDL WLAs.
 - (d) The Order also contains provisions to require treatment of stormwater from the 85th percentile, 24-hour storm event and, via the Permit's low impact development design philosophy, to implement measures that will reduce and retain runoff. This stormwater design standard is based on robust engineering and technical evaluations to determine state-of-the-art design standards for post-construction site scale BMPs and catchment scale regional BMPs.¹⁰¹
 - (e) The measures that control impacts from stormwater and non-stormwater discharges in the Order are typically effective across multiple pollutants.¹⁰² For example, retention basins, low-impact development controls, and low flow diversions can prevent stormwater and non-stormwater from reaching the receiving water at all—preventing degradation to the receiving water from all types of constituents. The Order's provisions are designed to achieve

¹⁰¹ See, for example, State Water Board Order WQ 2000-11, the "LA SUSMP Order" and Concept Development: Design Storm for Water Quality in the Los Angeles Region (SCCWRP, Technical Report 520, October 2007).

¹⁰² Clary, et al., 2020. *International Stormwater BMP Database: Summary Statistics*. Water Research Foundation.

water quality standards for those constituents that are impairing the receiving water, as well as to address other constituents of concern that may not be causing impairment as defined in CWA section 303(d) and State policy. The measures implemented pursuant to these provisions will likely result in improvements in levels of all pollutants, including those for which the receiving water may be high quality.

As a final backstop against degradation, the Order includes an extensive monitoring and reporting program, including:

- (i) Stormwater control monitoring to ensure controls implemented pursuant to Provision C.3 are installed and operating consistent with their design and intended function;
- (ii) Participation in a San Francisco Estuary monitoring program to answer the management questions identified in Provision C.8.c;
- (iii) Specified low impact development (LID) control measure monitoring pursuant to Provision C.8.d, intended to measure the compliance and effectiveness of LID controls.
- (iv) Trash monitoring pursuant to Provision C.8.e, intended to verify whether Permittees' trash control actions have effectively prevented trash from their jurisdictions from discharging to receiving waters, and to evaluate whether a no adverse effect condition in receiving waters has been achieved where controls have been installed;
- (v) Pollutants of concern monitoring pursuant to Provision C.8.f., intended to assess inputs of select POCs to the Bay from local tributaries and urban runoff, provide information to support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants;
- (vi) Pesticides and toxicity monitoring pursuant to Provision C.8.g, on wet and dry weather pesticide discharges and toxicity in receiving waters;
- (vii) Monitoring of full trash capture devices installed pursuant to Provision C.10 to ensure that they are installed and operating consistent with their design and intended function;

- (viii) Visual monitoring of measures equivalent to full trash capture implemented pursuant to Provision C.10, to ensure their effectiveness;
- (ix) Bacteria monitoring pursuant to applicable subprovisions of Provision C.14, intended to assess progress toward achieving wasteload allocations for TMDLs and inform adaptive management to achieve them; and
- (x) Monitoring and reporting on populations experiencing unsheltered homelessness, and the portion(s) of those populations receiving services, as a proxy for control of discharges of associated materials, such as trash and human waste, to the MS4.

8. Anti-backsliding Regulations

The CWA contains both statutory anti-backsliding provisions in section 402(o) and regulatory anti-backsliding provisions in 40 CFR section 122.44(l). The CWA's statutory prohibition against backsliding applies under a narrow set of criteria specified in section 402(o). Section 402(o)(1) prohibits relaxing technology based effluent limitations (TBELs) originally established based on best professional judgment (BPJ) to reflect subsequently promulgated effluent limitation guideline. This section is inapplicable here since none of the WQBELs in the Order are TBELs based on BPJ. Section 402(o)(1) also prohibits relaxing of WQBELs imposed pursuant to CWA sections 301(b)(1)(C) or 303(d) or (e), unless an exception in CWA section 402(o)(2) applies. Relaxation of WQBELs may also be allowed if such backsliding is consistent with the provisions in CWA section 303(d)(4). CWA section 303(d)(4) allows backsliding in the following circumstances. First, "CWA section 303(d)(4)(A) allows the establishment of a less stringent effluent limitation when the receiving water has been identified as not meeting applicable water quality standards (i.e., a nonattainment water)" if: (a) the existing WQBEL is based on a TMDL or other WLA ; (b) the cumulative effect of such revisions assures attainment of water quality standards; or (c) the designated use is removed." Second, section 303(d)(4)(B) applies to "waters where the water quality equals or exceeds levels necessary to protect the designated use, or to otherwise meet applicable water quality standards (i.e., an attainment water). Under CWA section 303(d)(4)(B), a WQBEL may be relaxed as long as relaxation complies with the state's antidegradation policy." "U.S. EPA has consistently interpreted CWA section 402(o)(1) to allow relaxation of WQBELs and effluent limitations based on state standards if the relaxation is consistent with the provisions of CWA section 303(d)(4) or if ... [certain] of the exceptions in CWA section 402(o)(2)... [apply]. The two provisions [303(d)(4) and 402(o)(2)] constitute independent exceptions to the prohibition against relaxation of effluent limitations. If either is met, relaxation is

permissible.” This Order complies with anti-backslidin⁹ requirements because no WQBEL has been relaxed from the Previous Permit.

9. Impaired Waters on CWA 303(d) List

CWA section 303(d)(1) requires each state to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after implementation of technology-based effluent limitations on point sources. Water bodies that do not meet water quality standards are considered impaired and are placed on the state’s “303(d) List.” Periodically, U.S. EPA approves the state’s 303(d) List. In June 2021, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for nonpoint sources, and are established to achieve the water quality standards for the impaired waters.

The Water Board has established TMDLs or Water Quality Improvement Plans for pesticide-related toxicity, mercury, PCBs, pathogens (bacteria), and sediment to remedy water quality impairments in water bodies in and around San Francisco Bay. These TMDLs identify MS4 discharges as a source of pollutants to these water bodies, and, as required, establish wasteload allocations (WLAs) for MS4 discharges to reduce the amount of pollutant discharged to receiving waters. CWA section 402(p)(3)(B)(iii) requires the Water Board to impose permit conditions, including: “management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.” Federal regulations also require that NDPES permits contain WQBELs consistent with the assumptions and requirements of all available WLAs (40 CFR 122.44(d)(1)(vii)(B)). CWC sections 13263 and 13377 also require that permits include limitations necessary to implement water quality control plans. Therefore, this Order includes WQBELs and other provisions to implement the TMDL WLAs assigned to Permittees regulated by this Order.

10. California Environmental Quality Act

The action to adopt an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to CWC section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit (County of Los Angeles v. State Water Resources Control Board (2006) 143 Cal.App.4th 985; Pacific Water Conditioning Assn, Inc. v. City Council of City of Riverside (1977) 73 Cal.App.3d 546, 555-556.).

11. Endangered Species Act Requirements

This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with discharge prohibitions, receiving water limits, and other requirements to protect the beneficial uses of waters of the state, including protecting rare, threatened, or endangered species. Permittees remain independently responsible for meeting all applicable federal and state Endangered Species Act requirements.

12. Climate Change

The observed and predicted impacts of climate change in Northern California include an increase in temperatures, heightened frequency of extreme weather conditions including extreme precipitation, flooding, and droughts, wildfires, and sea level rise. Sea level rise threatens to drown the tidal marshes that sustain the health of the Bay and Delta, increase the risk of catastrophic floods in low-lying neighborhoods, inundate crucial shoreline infrastructure, including wastewater treatment plants and storm sewers, and increase erosion and beach/land loss along the Pacific Coast. The combined impacts of climate change will affect water quality and many beneficial uses of waters.

The State Water Board adopted on March 7, 2017, a resolution that requires a proactive approach to climate change in all State Water Board actions, including drinking water regulation, water quality protection, and financial assistance (Resolution No. 2017-0012). The resolution lays the foundation for a response to climate change that is integrated into all State Water Board actions, by giving direction to the State Water Board divisions and encouraging coordination with the regional water boards. In addition, Executive Order N-10-19, signed on April 29, 2019, directs the California Natural Resources Agency, the California Environmental Protection Agency, and the California Department of Food and Agriculture to prepare a water resilience portfolio that meets the needs of California's communities, economy, and environment, and expand and/or reassess the priorities in the California Water Action Plan.

This Order follows the guiding principles of the State Water Board Resolution and well as Executive Order N-10-19 by contributing to an adaptive climate change and water resilience strategy. Through low impact development and green infrastructure projects, stormwater and non-stormwater runoff can be captured, infiltrated, and used to mitigate periodic drought conditions, reduce flood hazards and erosion rates, and recharge depleted groundwater aquifers and other water supply sources, all while reducing pollutant loads, maintaining beneficial uses in receiving waters and improving community health.

13. Human Right to Water

The Order is consistent with CWC section 106.3, which establishes the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. The Order implements CWC section 106.3 and promotes the State Water Board's resolution adopting the human right to water as a core value and directing its implementation in Water Board programs and activities (Resolution No. 2016-0010) by requiring receiving waters to meet adopted water quality standards that are designed to protect human health and ensure that water is safe for domestic use and by regulating discharges to minimize loading to attain the highest water quality which is reasonable, considering all demands being made on those waters and the total values involved (Wat. Code, §§13000, 13050, subdivisions (i)-(m), 13240, 13241, 13263; State Water Board Resolution No. 68-16.).

C. State Mandates

Article XIII B, section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." No provision of the Order constitutes an unfunded state mandate subject to subvention under Article XIII B, section (6)(a) of the California Constitution.

1. Renewal of the Permit Is Not a New Program or Higher Level of Service.

As a threshold matter, MS4 permitting is not a "program" as that term is used in Article XIII B, section 6. The California Supreme Court has defined a "program" for purposes of Article XIII B, section 6, as: (1) programs that carry out the governmental function of providing services to the public, or (2) laws which, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state (*San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 874 (reaffirming the test set forth in *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56); *Lucia Mar Unified School District v. Honig* (1988) 44 Cal.3d 830, 835.).

Although a requirement can be a program if it meets either prong (see *Dept. of Finance v. Comm'n on State Mandates* (2021) 59 Cal.App.5th 546,557; *County of Los Angeles v. Dept. of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545), the two prongs are interrelated. As the California Supreme Court put it, “the intent underlying section 6 was to require reimbursement to local agencies for the costs involved in carrying out functions peculiar to government, not for expenses incurred by local agencies as an incidental impact of laws that apply generally to all state residents and entities” (*San Diego Unified School Dist. v. Com. on State Mandates* (2004) 33 Cal.4th 859, 875 [citing *County of Los Angeles v. State of Cal.* (1987) 43 Cal.3d 46, 56–57.]). Thus, the applicability of a requirement to entities other than local governments can indicate that the requirement does not carry out a governmental function that provides services to the public (See *County of Los Angeles v. Dept. of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1546 [Requirement that all elevators, including county elevators, be equipped with fire and earthquake safety features “simply [was] not a governmental function of providing services to the public,” even if county elevators, specifically, were used to obtain governmental services.]; see also *San Diego Unified School Dist.*, *supra*, 33 Cal.4th at 876 [noting that state-mandated requirements applicable to both private- and public-sector employers to provide employee benefits did not increase or enhance government services, even if such requirements could indirectly improve the public employee applicant pool].).

Here, updated low impact development (LID) and trash provisions do not discharge a governmental service or apply only to local government. The LID requirements, including the reduced impervious surface threshold for implementing LID, do not, in any direct way, mandate the provision of a service to the public. LID will contribute in a general way to the overall reduction of pollution in stormwater, but its primary benefits will be localized, in many cases sited on private property and not shared broadly with the public.

LID provisions do not impose unique requirements on local governments, either. Other permits impose similar size thresholds on both public and private permittees as a way of reducing runoff or generating other water quality benefits. See Fact Sheet for Provision C.3, *infra* (listing other permits containing a 5,000 sf impervious surface threshold); see also, e.g., Construction Stormwater General Permit (Order No. 2009-0009-DWQ) (imposing 1-acre threshold); Overwater Structures WDRs (Order No. R2-2018-0009) (imposing general permit requirements for small overwater structure construction projects).

Similarly, the green infrastructure requirements are not unique to local agencies. The Regional Water Board imposes stormwater treatment requirements on independently-permitted development projects (See, e.g., Order No. R2-2018-0019, pp. 7-8 [requiring stormwater treatment proportionate to amount of impervious surface constructed]; see also Order No. R2-2015-0020, pp. 4-5 [establishing

WDRs for voluntary habitat restoration, including low impact/green erosion control measures].). The Regional Water Board also requires stormwater control measures to be installed on roads maintained by private parties in multiple permits (See generally, e.g., Order No. R2-2017-0033 [requiring erosion control measures for roads on vineyards]; Order No. R2-2016-0031 [requiring erosion-control measures for roads at confined animal facilities].).

As with the adjusted LID thresholds, changes in trash provisions do not discharge a governmental function that provides services to the public. As demonstrated by the statewide applicability of the Trash Amendments and the regionwide applicability of the Water Board's prohibition on the discharge of trash, the elimination of trash discharges is not a uniquely governmental function, but a responsibility that private and public entities, as well as individuals, collectively share.

Indeed, the requirements of the Trash Amendments apply to private and public entities across California. The Amendments require Caltrans, a state agency, private industrial dischargers, private or public operators of recreational facilities, and municipalities alike to comply with the prohibitions on trash discharges by implementing full trash capture systems or their equivalent.¹⁰³ Cease and Desist Order No. R2-2019-0007, which determined that Caltrans was out of compliance with its NPDES MS4 Permit requirement to timely implement trash control measures in all high trash generating areas in the San Francisco Bay Region, requires Caltrans to “implement structural and non-structural trash controls to meet full trash capture equivalency” in all significant trash-generating areas within its right-of-way by 2030 (Order No. R2-2019-0007, pp 5-6.). This requirement and its deadlines are comparable to the requirements and deadlines with which Permittees must comply. Indeed, as discussed further below, Caltrans and numerous permittees have jointly implemented full-trash capture projects that meet both of their permit requirements.¹⁰⁴

Even if MS4 requirements could be considered a “program,” the requirements of the Order do not constitute a *new* program or a *higher level of service* as compared to the requirements contained in the previous permits issued by the Water Board to the Permittees. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the CWA (33 U.S.C. § 1342(p)(3)(B)) and is not new to this permit cycle. The Permittees have been required to have stormwater permits for the past three decades, and to comply with

¹⁰³ State Water Board, Final Part I Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, p. E-2 – E-4; see also Basin Plan, Table 4-1, Prohibitions 7 & 8 (prohibiting the discharge of all “rubbish, refuse...or other solid wastes” and “floating materials” by any discharger, public or private, in the San Francisco Bay Region).

¹⁰⁴ Yan, Qi. *Summary of Caltrans' Trash Control Cooperative Implementation Agreement Projects* (July 2021).

prohibitions on the discharge of trash, sediment, untreated human waste, spills, pesticides, and toxic substances, like PCBs and mercury, for a half-century. (Basin Plan, Table 4-1, Prohibitions 6, 7, 8, 9, 11, 13 & 15.) Similarly, Permittees carried out tasks like street sweeping, pollution prevention, public education about litter and illegal dumping, and elimination of illicit connections, long before MS4 permits required it. The MRP's LID provisions have been in place for four permit cycles. The inclusion of improved measures as the MS4 programs evolve and mature over time is specifically anticipated under the CWA (55 Fed. Reg. 47990, 48052 (Nov. 16, 1990); 61 Fed. Reg. 43761 (Aug. 26, 1996); U.S. EPA "*Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits*," EPA 833-D-96-001 (September 1996)) because the experience gained in implementation of existing permits and ongoing technological developments help direct appropriate adaptation of the programs to better address pollution. Such refinements improve the effectiveness of the ongoing program and do not constitute a new program or higher level of service. And while the new or advanced measures may result in additional costs to the Permittees, resulting new costs is not the test for a higher level of service. "If the Legislature had intended to continue to equate 'increased level of service' with 'additional costs,' then the provision would be circular: 'costs mandated by the state' are defined as 'increased costs' due to 'an increased level of service,' which, in turn would be defined as 'additional costs'" (*County of Los Angeles v. Com. on State Mandates* (2003) 110 Cal.App.4th 1176, 1191, quoting *Workers' Compensation Mandates Decision, supra*, 43 Cal.3d. at p. 55.).

2. The Permit Requirements Fall Under Several Exceptions to Mandates Rules

Even if some of the requirements imposed on the Permittees with this reissuance could be considered to be new programs or higher levels of service, the following exceptions to a finding of unfunded mandates preclude subvention here:

a. The permit provisions are required by the CWA and its implementing regulations:

Where a law imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government, no subvention is required unless the statute or executive order mandates costs that exceed the mandate in that federal law or regulation (Gov. Code, § 17556(c).). The MRP implements federally mandated requirements under the CWA and implementing regulations, so its requirements are therefore not subject to subvention of funds. This includes federal requirements to: (i) effectively prohibit non-storm water discharges through the MS4 to receiving waters; (ii) reduce the discharge of pollutants in stormwater to the maximum extent practicable; (iii) include such other provisions as the permitting authority (here, the Water Board) determines appropriate for the control of such pollutants; (iv) attain applicable TMDL wasteload allocations; and (v) conduct monitoring and reporting.

- i. Non-stormwater discharge prohibition: Federal law requires that an MS4 permit effectively prohibit non-stormwater discharges through the MS4 to receiving waters (33 U.S.C. § 1342(p)(3)(B)(ii)). The Order's requirements to achieve the effective prohibition of non-stormwater discharges are thus compelled by federal law. For instance, firefighting foam and water discharges are non-stormwater discharges that can have significant impacts on water quality. The requirements to control these discharges, which include the development and implementation of BMPs to prevent firefighting foam and water from entering storm drains, implement the prohibition on non-stormwater discharges.

Other permit requirements implement the federal mandate to reduce pollutants to the maximum extent practicable and the effective prohibition on non-stormwater discharges at different times of year. For instance, trash enters waterways as a non-stormwater discharge during dry weather, when it can reach storm drains by direct discharge or in non-stormwater, and as a pollutant in stormwater discharges during wet weather. On-land trash control efforts, such as pollution prevention, street-sweeping, source control initiatives, and controls applicable to private lands apply in both dry and wet weather, and are necessary both to reduce pollutants in stormwater to the maximum extent practicable and to eliminate non-stormwater discharges of trash to the storm drain system (See *Environmental Protection Information Center v. Pacific Lumber Co.* (N.D. Cal. 2004) 301 F.Supp.2d 1102, 1111 [where stormwater runoff was mixed with pollutants, it was "not 'composed entirely of stormwater'"].).

Similarly, new controls to manage discharges from unsheltered homeless populations largely implement the non-stormwater discharge prohibition by supplementing Permittees' existing Direct Discharge Programs, and by targeting illicit discharges of human waste and trash to the storm drain system. To the extent that enhanced bacteria controls require Sunnyvale and Mountain View to intensify efforts to discover leaks and illicit connections, manage municipal operations to prevent dry-weather discharges to the storm drain, and reduce illegal dumping, these provisions also implement the prohibition on non-stormwater discharges.

- ii. TMDL requirements:

The CWA requires TMDLs to be established for waterbodies that do not meet federal water quality standards (33 U.S.C. § 1313(d)). The CWA also requires that MS4 permits include "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants" (33 U.S.C. § 1342(p)(3)(B)(iii)). U.S. EPA interprets this provision to mandate "controls to reduce the discharge of pollutants to the

maximum extent practicable, *and where necessary water quality-based controls.*¹⁰⁵

Once U.S. EPA or a state establishes a TMDL, federal law requires that NPDES permits must contain water quality-based effluent limitations (WQBELs) consistent with the assumptions and requirements of any applicable wasteload allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B); see also State Water Board Order No. WQ 2021-0052-EXEC, p. 73.) Indeed, TMDLs are developed for the purpose of specifying requirements for the achievement of water quality standards in impaired waters (33 U.S.C. § 1313(d); 40 C.F.R. § 130.7). The Order's requirements for attainment of TMDL wasteload allocations are therefore compelled by federal law.

Several generations of the MS4 permits issued in California have prohibited discharges that cause or contribute to exceedances of water quality standards in the receiving water. TMDL provisions, including WQBELs, simply add a process for meeting this requirement, generally based on a compliance schedule.

iii. Monitoring and reporting requirements:

Federal law requires that NPDES permits incorporate monitoring and reporting provisions (33 U.S.C. §§ 1318(a); 1342(a)(2); 40 C.F.R. §§ 122.26(d)(2)(i)(F); 122.41(h), (j)-(l); 122.42(c); 122.44(i); 122.48.). The Order's monitoring and reporting requirements are thus imposed pursuant to federal law.

iv. Maximum Extent Practicable (MEP) standard:

The CWA mandates that the Order "require controls to reduce the discharge of pollutants to the maximum extent practicable" (33 U.S.C. § 1342(p)(3)(B)(iii).). *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, as modified on denial of rehearing (Nov. 16, 2016) (*Department of Finance*) analyzed whether the CWA's MEP standard required four particular provisions concerning trash receptacles and inspections in the 2001 Los Angeles County MS4 permit. In concluding that the provisions were not required by federal law, the Supreme Court stated that, "[h]ad the Regional Board found when imposing the disputed permit conditions, that those conditions were the only means by which the maximum extent practicable standard could be implemented, deference to the board's expertise in reaching that finding would be appropriate" (*Department of Finance, supra*, 1 Cal.5th at p. 768.). The Supreme Court

¹⁰⁵ Phase I Stormwater Regulations, Final Rule, 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990) (emphasis added); see also *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-887; Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

further stated that “[s]uch findings are “case specific, based among other things on factual circumstances” (*Id.*, fn. 15.).

To be entitled to deference, regional water boards must make an express finding that the particular set of permit conditions in a given permit is required to meet that federal standard and must support that finding with evidence. The Water Board expressly finds that the Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in MS4 discharges to the MEP. The requirements relate to municipal operations, new development and redevelopment, industrial and commercial controls, construction controls, and public information and outreach. The mix of program elements in the Order reflects the necessary pollutant reduction expected by the demanding federal MEP standard, but also represents a balancing of competing interests such as effectiveness, ease of implementation, and practicability. To the extent there may be multiple means of achieving pollutant reductions and that there could be trade-offs between program areas with potentially higher costs and greater pollutant reductions, the permit programs are structured to provide the optimum reduction of pollutants necessary to reduce pollutants to MEP. This finding is the expert conclusion of the principal state agency charged with implementing the NPDES program in California and therefore entitled to deference under *Department of Finance*.

The Order’s requirements represent structural and non-structural water quality control measures that are effective, technically feasible, and generally accepted as appropriate. They are necessary to meet the MEP standard, an ever evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge and technology regarding controlling stormwater runoff continue to evolve, so too must the actions that are taken to comply with the standard.¹⁰⁶

For example, based on advancing knowledge and technology related to limiting stormwater pollutants from impervious surfaces through low impact development strategies, economic considerations, and consideration of the evolving MEP standard, this Order contains new requirements for smaller new developments and redevelopments, including roads, and green infrastructure. They are necessary to meet the federal MEP standard and consistent with other U.S. EPA-issued municipal storm water permits, as explained in the Fact Sheet for Provision C.3. The Supreme Court in

¹⁰⁶ See also 55 Fed. Reg. 47990, 48052 (“EPA anticipates that storm water management programs will evolve and mature over time.”); 64 Fed. Reg. 68722, 68754; Dec. 8, 1999 (“EPA envisions application of the MEP standard as an iterative process.”); and Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits (Sept. 1, 1996) (“The interim permitting approach uses BMPs in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards.”).

Department of Finance suggested that the inclusion of equivalent or substantially similar provisions by the U.S. EPA in other permits may support a finding that the provisions are necessary to achieve MEP (*Dept. of Finance*, supra, 1 Cal.5th at p. 772.).

Similarly, enhanced bacteria provisions do not require affected Permittees to implement sweeping new programs or state-of-the-art technologies. Instead, they require Permittees whose stormwater discharges contribute to bacteria exceedances to ensure that streets are clean, storm drain catchments are clean, and that litter and pet waste laws are enforced. The fact that all elements of enhanced bacteria controls are already in place demonstrates that these elements are practicable. Intensifying use of these existing controls ensures that they do, in fact, reduce bacteria pollution to the MEP.

b. Permittees have authority to fund the costs through service charges, fees, or assessments:

Even if any of the permit provisions could be considered unfunded state mandates, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to fund the costs through service charges, fees, or assessments (*Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 398.). Here, Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with the Order. Permittees certainly have fee authority under their police powers (See, Cal. Const., art. XI, § 7; *Freeman v. Contra Costa County Water Dist.* (1971) 18 Cal.App.3d 404, 408 (“It cannot be denied that prevention of water pollution is a legitimate governmental objective, in furtherance of which the police power may be exercised.”); *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 561-62 (holding in part that local governments have the authority sufficient to pay for inspection requirements for commercial and industrial facilities and construction sites to ensure compliance with various environmental regulations in an MS4 permit under their police powers for the prevention of water pollution).

This Fact Sheet demonstrates that numerous activities contribute to the pollutant loading from the MS4. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership (See, e.g., *Apartment Ass’n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 (upholding inspection fees associated with renting property).). The authority of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention (*Clovis Unified School Dist. v. Chiang* (2010) 188 Cal.App.4th 794, 812 [“To the extent a local agency or school district ‘has the authority’ to charge for the mandated program or increased level of service, that charge cannot be recovered as a state-mandated cost.”], quoting *Connell v. Superior Court* (1997)

59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.).

Permittees have argued in the past that their fee or taxation authority is constrained by California Constitution article XIII D, section 6, also known as Proposition 218 (Cal. Const., art. XIII D, § 6, subd. (c); see also *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.). However, Proposition 218 is not an impediment to this Permittees' fee authority.¹⁰⁷ The Constitution has an exception to the voter approval requirements of Proposition 218, "for fees or charges for sewer, water, and refuse collection services" (Cal. Const. Article XIII D, section 6, subd. (c).).

The Legislature recently enacted two important pieces of legislation confirming fee authority without the need for voter approval. In Assembly Bill 2043 (2014), effective January 1, 2015, the Legislature amended the definition of "water" for purposes of articles XIII C and XIII D to mean "water from any source" (Gov. Code, § 53750, subd. (n), amended by Assembly Bill 2043 (Stats. 2014, ch. 78, § 2.). In doing so, the Legislature stated that its act "is declaratory of existing law." (Stats. 2014, ch. 78, § 1(c).) With Senate Bill 231 (2017), effective January 1, 2018, the Legislature "reaffirm[ed] and reiterate[d]" that the definition of "sewer" for purposes of article XIII D includes: systems, all real estate, fixtures, and personal property owned, controlled, operated, or managed in connection with or to facilitate sewage collection, treatment, or disposition for sanitary or drainage purposes, including lateral and connecting sewers, interceptors, trunk and outfall lines, sanitary sewage treatment or disposal plants or works, drains, conduits, outlets for surface or storm waters, and any and all other works, property, or structures necessary or convenient for the collection or disposal of sewage, industrial waste, or surface or storm waters (Gov. Code, § 53750, subd. (k); see also Gov. Code § 53751, subs. (h) and (i), added by Senate Bill 231, Stats. 2017, ch. 536, § 2.). These legislative actions confirm that the Permittees have authority to raise fees or charges, without voter approval, for costs related to their MS4s (See *Paradise Irrigation Dist. v. Com. on State Mandates* (2019) 33 Cal.App.5th 174, 197 [noting that effect of Senate Bill 231 was to exempt stormwater systems from voter approval requirement].).

In addition, Health and Safety Code section 5471, subdivision (a), gives dischargers fee authority for "services and facilities furnished...in connection with its water, sanitation, *storm drainage*, or sewerage system" (Health & Safety Code, § 5471, subd. (a) (emphasis added).). Similarly, Public Resources Code section 40059, subdivision (a)(1), also confers fee authority on counties, cities, districts, or other local governmental agencies for "[a]spects of solid waste

¹⁰⁷ Such authority is also undiminished by Proposition 26, which specifically excludes assessments and property-related fees imposed in accordance with Proposition 218 from the definition of taxes (Cal. Const., art. XIII C, § 1, subd. (e)(7).).

handling which are of local concern, including, but not limited to, frequency of collection, means of collection and transportation, level of services, charges and fees, and nature, location, and extent of providing solid waste handling services.”

The ability of the Permittees to levy fees, assessments, or service charges to pay for compliance with the requirements of the Order cannot be disputed. In addition to the general authority above, some of the Permittees have specific authority to levy funds to pay for permit compliance through many means, including inspection fees, stormwater fees, development impact fees, trash fees, parks fees, and business improvement districts. Thus, the City of Palo Alto adopted an increased Storm Water Management Fee in 2017 to help pay for both routine maintenance of stormwater infrastructure, as well as new initiatives, including stormwater recycling and green infrastructure.¹⁰⁸ Voters in the City of Berkeley approved an increased stormwater fee in 2018 with provisions for annual increases of no more than 3 percent.¹⁰⁹ Voters in the City of Alameda adopted a stormwater management fee in 2019 for capital improvement, operation, and maintenance of the storm drain system, including clean water controls.¹¹⁰ The City of Moraga included as part of its increased development impact fee schedule a “Storm Drainage Fee” to be “assessed on all types of development (within Town boundaries) that results in the addition of impervious surface, and which thereby increases demand on the Town’s storm drainage facilities.”¹¹¹ Many permittees impose park admissions fees or parks fees as a component of their development impact fees, which can help ensure improvements to park infrastructure (e.g., installation of pet waste stations) or operational costs (e.g., implementation of integrated pest management to comply with the pesticides TMDL).¹¹² Many, if not all, other municipalities and counties assess trash collection fees, which help cover the costs of implementing the trash provisions¹¹³ and homeless encampment BMPs.¹¹⁴ The

¹⁰⁸ City of Palo Alto, Storm Water Management Fee (2021); accessed at: <https://www.cityofpaloalto.org/Departments/Public-Works/Engineering-Services/Storm-Water-Management-Fee>

¹⁰⁹ City of Berkeley, Approval and Levy of 2018 Clean Stormwater Fee in FY 2020, p. 4 (July 16, 2019).

¹¹⁰ City of Alameda, 2019 Water Quality & Flood Protection: Frequently Asked Questions (alamedaca.gov).

¹¹¹ Town of Moraga, 2016 Comprehensive Development Impact Fee Update (May 2016), p. 36.

¹¹² See, e.g., Sunnyvale Municipal Code, § 18.10.020, subd. (d).

¹¹³ See, e.g., Alameda County Department of Environmental Health Fee Schedule (2021), pp. 6-8 (Several pages of waste management-related fees, including fees for inspections), accessed at: <https://deh.acgov.org/deh-assets/docs/General-Fees.pdf>

¹¹⁴ City of San Jose, “BeautifySJ Trash and Waste Services Expand” (November 20, 2020) (City Council approved \$3 million to pay for trash pickup at homeless encampments); see also Wipf, Carly. “Update:

City of Oakland has ten business improvement districts, or BIDs, in which businesses help to fund maintenance costs, including the costs of trash pickup and graffiti removal, in their respective districts.¹¹⁵ The Permittees have authority to levy fees for firefighting and prevention.¹¹⁶ In short, Permittees have multiple sources of fee funding to implement permit requirements.

Even if voter approval may be required prior to levying fees, that does not mean that a local agency lacks the authority to levy fees. In *Paradise Irrigation Dist. v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 182, the Court considered whether the majority protest procedure added by Proposition 218 deprived local agencies of authority to impose fees for water service. Article XIII D, section 6(a) requires a local agency to identify parcels subject to a new fee, calculate the fee amount, and provide notice to affected property owners (Cal. Const., art. XIII D, § 6, subd. (a)(1)). If a majority of the property owners submit written protests against the fee, the fee may not be imposed (*Id.*, subd. (a)(2)). The Court held that the “majority protest procedures are properly construed as a power-sharing arrangement between the districts and their customers, rather than a deprivation of fee authority” (33 Cal.App.5th at p. 182.). It explained that, when considering how voter powers affect the ability of local governments to impose fees, courts “presume local voters will give appropriate consideration and deference to state mandated requirements . . .” (*Id.* at p. 194, citing *Bighorn Desert View Water Agency v. Verjil* (2006) 39 Cal.4th 205, 220.). “Although this power-sharing arrangement has the potential for conflict, we must presume that both sides will act reasonably and in good faith” (*Id.*, at p. 192.) Further, the fact that, “as a matter of practical reality, the majority protest procedure allows water customers to defeat the District’s authority to levy fees” was not dispositive; “the inquiry into fee authority constitutes an issue of law rather than a question of fact.” (*Id.* at p. 195, citing *Connell*, supra, 59 Cal.App.4th at p. 401.). “Fee authority is a matter governed by statute rather than by factual considerations of practicality;” it is not controlled by whether municipalities have tried and failed to levy fees (*Id.*). If there is statutory authority to levy fees, then there is no right to subvention (*Id.*).

Grants, both state and federal, can also offset the costs of stormwater implementation. For instance, the State of California administers the Clean Water State Revolving Fund, which the 2021-2022 Intended Use Plan

Spend \$3 million more to pick up San Jose trash, officials recommend,” *San Jose Spotlight* (Sept. 14, 2020); see also Bond Graham, Darwin. “Oakland’s new budget doesn’t ‘defund’ the police, but it boosts funding for alternatives,” *The Oaklandside* (June 25, 2021) (Oakland approving extension of sanitation services to 107 homeless encampments.)

¹¹⁵ See, e.g., maintenance services performed by Downtown Oakland Association (<https://downtownoakland.org/clean-safe/>).

¹¹⁶ Markovich, Ally. “Berkeley firefighters get \$12.7M to tackle growing wildfire threat,” *Berkeleyside* (July 1, 2021) (Measure FF funds to pay for additional staff, ambulances, vegetation management, and training);

specifically notes may be used to fund “[s]tormwater and dry weather runoff reduction from Municipal Separate Storm Sewer Systems” in the San Francisco Bay Region.¹¹⁷ Proposition 1 authorized \$200 million for “green infrastructure, rainwater and stormwater capture projects, and stormwater treatment facilities,” and stormwater project planning.¹¹⁸ The City of San Pablo is a recipient of a 2021 Proposition 1 grant award. Caltrans also provides significant funding for cooperative implementation of trash control projects. Atherton, Richmond, Vallejo, Hayward, Emeryville, San Jose, Palo Alto, East Palo Alto, San Mateo, Oakland and unincorporated Alameda County have all completed or received funding to implement full trash capture projects jointly with Caltrans.¹¹⁹ The 2021 Clean California program expands Caltrans’ funding for litter abatement and public education and incorporates a nearly \$300 million local grant program.¹²⁰

U.S. EPA also administers grant programs for various activities that this permit requires, such as TMDL implementation, nonpoint source control, and training.¹²¹

D. Statewide Industrial and Construction Stormwater General Permits

The State Water Board has issued NPDES general permits for the regulation of stormwater discharges associated with industrial activities and construction activities. To effectively implement the New Development (and significant redevelopment) and Construction Controls, Illicit Discharge Controls, and Industrial and Commercial Discharge Controls components in this Permit, the Permittees will conduct investigations and local regulatory activities at industrial and construction sites covered by these general permits. However, under the CWA, the Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Water Board staff intends to work cooperatively with the Permittees to ensure that industries and construction sites within the Permittees’ jurisdictions are in compliance with applicable general permit requirements and are not subject to uncoordinated stormwater regulatory activities.

¹¹⁷ State Water Resources Control Board, CWSRF, Prop 1, and Prop 68 Intended Use Plan (June 15, 2021), p. 12.

¹¹⁸ Wat. Code § 79747.

¹¹⁹ Correspondence with Qi Yan (July 23, 2021).

¹²⁰ Caltrans, Clean California (2021), p. 2; see also, Governor’s Office, “Governor Newsom Kicks Off Clean California Day of Action Highlighting New Initiative to Clean and Revitalize Neighborhoods Across the State” (July 7, 2021).

¹²¹ See generally, U.S. EPA Water Infrastructure and Resiliency Finance Center, “Federal and State Funding Programs -Stormwater &Green Infrastructure Projects” (April 2017).

E. Regulated Parties

Each of the Permittees listed in this Permit owns or operates a MS4, through which it discharges urban runoff into waters of the United States within the San Francisco Bay Region and, with respect to the East Contra Costa County Permittees, the Sacramento and San Joaquin River basins. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is “interrelated” to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the United States.

F. Permit Coverage

The Permittees each have jurisdiction over and maintenance responsibility for their respective MS4s in the Region. Federal, state or regional entities within the Permittees’ boundaries, not currently named in this Permit, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Permit. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities. Most of these facilities are regulated under the State Water Resources Control Board’s general permit for stormwater discharges from small municipal separate storm sewer systems (WQ Order 2013-0001-DWQ, as amended) and are required to control the discharge of pollutants from their systems. The Water Board will consider additional such facilities for coverage under that NPDES permit or otherwise pursuant to U.S. EPA Phase II stormwater regulations..

VI. PERMIT PROVISIONS

A. Discharge Prohibitions

Prohibition A.1. Legal Authority – CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

Neither the CWA nor federal regulations specifically define “non-stormwater.” The definition of “non-storm water” is derived from the definition of “storm water.” Federal regulations define “storm water” as “storm water runoff, snow melt runoff, and surface runoff and drainage” (40 CFR § 122.26(b)(13)). While “surface runoff and drainage” is not defined in federal law, U.S. EPA’s preamble to the federal regulations demonstrates that the term is related to precipitation events such as rain and/or snowmelt (55 Fed.Reg. 47990, 47995-96 (Nov. 16, 1990)). For example, U.S. EPA states:

“In response to the comments [on the proposed rule] which requested EPA to define the term ‘storm water’ broadly to include a number of classes of discharges which are not in any way related to precipitation events, EPA believes that this rulemaking is not an appropriate forum for addressing the appropriate regulation under the NPDES program of such non-storm water discharges Consequently, the final definition of storm water has not been expanded from what was proposed.”

(*Ibid.*) The storm water regulations themselves identify numerous categories of discharges including landscape irrigation, diverted stream flows, discharges from drinking water supplier sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, and street wash water as “non-storm water.” While these types of discharges may be regulated under storm water permits, they are not considered storm water discharges (40 CFR §122.26(d)(2)(iv)(B)). This review of the storm water regulations and U.S. EPA’s discussion of the definition of storm water in its preamble to these regulations strongly supports the interpretation that storm water includes only precipitation-related discharges. Therefore, non-precipitation related discharges are not storm water discharges and are not subject to the MEP standard in CWA section 402(p)(3)(B)(iii). Rather, non-storm water discharges are effectively prohibited pursuant to CWA section 402(p)(3)(B)(ii).

While federal regulations have no definition for “non-storm water discharges,” “illicit discharges” is defined and the terms are often used interchangeably (See, e.g., 40 CFR § 122.26(d)(2)(iv)(B)(1)). “Illicit discharge” is defined by U.S. EPA as “any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit . . . and discharges

resulting from firefighting activities”¹²² (40 CFR § 122.26(b)(2)). The federal regulations require that non-stormwater discharges be controlled if they are a significant source of pollutants and the permitting authority is expected to include permit conditions to prohibit or control specified categories of non-stormwater discharges if they are determined to be a source of pollutants to waters of the United States (40 CFR § 122.26(d)(2)(iv)(B)(1)).

Prohibition A.2. Legal Authority – San Francisco Bay Basin Plan, Chapter 4 Implementation, Table 4-1, Prohibition 7, and the trash discharge prohibitions in the ISWEBE and Ocean Plan.

B. Receiving Water Limitations

Receiving Water Limitation B.1. Legal Authority – San Francisco Bay Basin Plan, Chapter 3, Water Quality Objectives.

Receiving Water Limitation B.2. Legal Authority – CWA section 402(p)(3)(B)(iii) requires MS4 permits to include “such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants.” EPA interprets this provision to mandate “controls to reduce the discharge of pollutants to the maximum extent practicable, and *where necessary water quality-based controls*.”¹²³ U.S. EPA has reiterated that MS4 “permit conditions must provide for attainment of applicable water quality standards (including designated uses), allocations of pollutant loads established by a TMDL, and timing requirements for implementation of a TMDL.”¹²⁴ The State Water Board has also determined that limitations necessary to meet water quality standards are appropriate for the control of pollutants discharged by MS4s and must be included in MS4 permits (State Water Board Orders WQ 91-03, 98-01, 99-05, 2001-15, 2021-0052-EXEC), and 2020-0038.). This Order accordingly requires that discharges shall not cause or contribute to violations of water quality standards. The receiving water limitations are necessary and appropriate to control MS4 discharges because storm water discharges can cause or contribute to excursions above water quality standards. The inclusion of receiving water limitations is also consistent with the Ninth Circuit Court of Appeal’s ruling in *Defenders of Wildlife v. Browner* (191 F.3d 1159, 1166 (1999)) that the permitting authority has discretion regarding the nature and timing of requirements that it includes as MS4 permit conditions to attain water quality standards.

¹²² While not illicit discharges, discharges from firefighting activities may be regulated where they contribute significantly to pollution in stormwater. 40 C.F.R. 122.26(d)(2)(iv)(B)(1); see also 64 Fed. Reg. 68722, 68756, 68758.

¹²³ Phase I Stormwater Regulations, Final Rule, 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990) (emphasis added); see also *Building Industry Ass’n of San Diego County v. State Water Bd.* (2004) 124 Cal.App.4th 866, 882-887).

¹²⁴ See, e.g., Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

C. Provisions

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The Water Board's Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) contains water quality objectives, as well as the following waste discharge prohibition: "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in [CWC] Section 13050, is prohibited."

CWC section 13050(l) states "(1) 'Pollution' means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) 'Pollution' may include "contamination."

CWC section 13050(k) states "'Contamination' means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. 'Contamination' includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected."

CWC section 13050(m) states "'Nuisance' means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes."

CWC Section 13243 provides that a water board, "in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted."

CWC Section 13263(a) provides that waste discharge requirements prescribed by the water board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A -D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires NPDES permits to include any requirements necessary to “[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(vii) requires water quality-based effluent limits that are consistent with the assumptions and requirements of any available wasteload allocation.

State Water Board Orders WQ 98-01 and 99-05 are precedential orders that require municipal stormwater permits to not cause or contribute to exceedances of water quality standards in the receiving water. State Water Board Order WQ 99-05 specifically requires that Provision C.1 include language that Permittees shall comply with discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges and adopted an iterative approach to complying with the limitations where there are exceedances. Courts have held that compliance with the iterative process does not excuse liability for violations of water quality standards (*Building Industry Assn. of San Diego v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866; *City of Rancho Cucamonga v. Regional Water Quality Control Bd.* (2006) 135 Cal.App.4th 1377; *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2011) 673 F.3d 880, rev'd on other grounds sub nom; *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2013) 133 S.Ct. 710, mod. by *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, cert. den. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2014) 134 S.Ct. 2135.).

State Water Board Order WQ 2015-0075, as amended by Order WQ 2021-0052-EXEC, also affirmed that good faith implementation of the iterative process does not excuse liability for violations of water quality standards. It, however, allowed an alternative path to permit compliance that allows MS4 dischargers that are willing to pursue significant undertakings to be deemed in compliance with the receiving water limitations. It specifically directs regional water boards to follow the principles stated below when issuing a municipal stormwater permit, unless a board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons.

The receiving water limitations provisions of Phase I MS4 permits should continue to require compliance with water quality standards in the receiving water and should not deem good faith engagement in the iterative process to constitute such compliance. The Phase I MS4 permits should therefore continue to use the receiving water limitations provisions as directed by State Water Board Order WQ 99-05.

- (1) The Phase I MS4 permits should include a provision stating that, for water body-pollutant combinations with a TMDL, full compliance with the requirements of the TMDL constitutes compliance with the receiving water limitations for that water body-pollutant combination.
- (2) The Phase I MS4 permits should incorporate an ambitious, rigorous, and transparent alternative compliance path that allows permittees appropriate time to come into compliance with receiving water limitations without being in violation of the receiving water limitations during full implementation of the compliance alternative.
- (3) The alternative compliance path should encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements.
- (4) The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles.
- (5) The alternative compliance path should encourage multi-benefit regional projects that capture, infiltrate, and reuse stormwater and support a local sustainable water supply.
- (6) The alternative compliance path should have rigor and accountability. Permittees should be required, through a transparent process, to show that they have analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions. Permittees should be further required, again through a transparent process, to monitor the results and return to their analysis to verify assumptions and update the solutions. Permittees should be required to conduct this type of adaptive management on their own initiative without waiting for direction from the regional water board.

In State Water Board Order WQ 2020-0038, the State Water Board applied and further explained the alternate compliance path principles in Order WQ 2015-0075 when it reviewed the Los Angeles Regional Water Board's Los Angeles County MS4 permittees' watershed management plans and an enhanced watershed management program (LA County MS4 Permit), which were used as alternative paths to compliance. The State Water Board directed changes to those plans, reiterating State Board Order WQ 2015-0075's standards for rigor, transparency, and accountability for alternate compliance. The State Water Board referred regional water boards using alternative compliance approaches to ensure consistency with certain additional principles in Order

WQ 2020-0038, including “ensuring plans approved clearly explain their development process, identify enforceable milestones, and detail the water body-pollutant combinations to which the plans apply and, to the extent limiting-pollutant or similar approaches are used, that their use is justified such that there is confidence treatment of the limiting pollutant will address the other water body-pollutant combinations to be addressed” (State Water Board Order WQ 2020-0038 [Los Angeles County], p. 164.). At the same time, the State Water Board recognized its order is not intended to curtail the flexibility of the regional water boards to adopt alternative compliance approaches that best fit their particular regions or to restrain the evolution of the regional water boards’ approaches to alternative compliance.

Alternative Path to Compliance with Receiving Water Limitations for Certain Pollutants and Consistency with State Water Board Precedent

This Order, as did the previous order, goes beyond requiring an open-ended iterative approach to compliance with water quality standards by including pollutant-specific provisions, C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f, with numerical or narrative WQBELs with milestones and deadlines. These provisions, other than C.10, which implements the statewide Trash Amendments, and C.14.a, which address bacteria exceedances in two water bodies that have not been listed as impaired for bacteria, implement adopted TMDL wasteload allocations or Water Quality Improvement Plans and the associated implementation plans in the Basin Plan and the Water Quality Control Plan for the Sacramento and San Joaquin Basins and specify what Permittees must do during the term of the Order to manage discharges of the specific pollutants that may cause or contribute to violations of water quality standards. Provision C.10 requires controls to meet water quality objectives applicable to trash in the Basin Plan, ISWEBE, and Ocean Plan.

Provision C.1 provides a bridge between the receiving water limitations, which state that discharges shall not cause or contribute to a violation of any applicable water quality standard, and these pollutant-specific provisions that include enforceable water quality-based requirements that Permittees must meet during the term of this Order to manage their contributions to violations or to prevent violations of water quality standards in receiving waters. In accordance with Basin Plan Section 4.8 – Stormwater Discharges and the applicable TMDL implementation requirements specified in the implementation plans adopted into the Basin Plan for and with TMDLs associated with these provisions, the requirements in these pollutant specific provisions are based on an updated assessment and consideration of technically and economically feasible control measures to reduce pollutants in stormwater discharges. As such, each of these provisions establishes a path to compliance with associated receiving water limitations. These requirements are a direct outgrowth of knowledge and experience with the presence of these pollutants in receiving waters (e.g., San Francisco Bay segments and urban tributaries) based on monitoring and special studies conducted by the San Francisco Bay Regional Monitoring Program, required monitoring from previous permits,

special studies conducted by municipalities, and other studies conducted by the San Francisco Estuary Institute.

The alternative path to compliance in the Permit is structured differently than the LA County MS4 Permit's watershed management program-based alternative compliance path reviewed by the State Water Board in State Water Board Orders WQ 2015-0075, as amended by Order WQ 2021-0052-EXEC, and 2020-0038. Specifically, an alternative compliance path is incorporated into the permit as follows:

- The requirements constituting the alternative compliance path are spelled out in sections C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f. In the LA County MS4 Permit, permittees were required to propose and develop watershed management programs with structural and non-structural controls that would then be approved by the Los Angeles Water Board as appropriate for alternative compliance. Here, Permittee requirements and controls are specified in the Permit itself rather than proposed by the Permittees in a plan.
- With one exception,¹²⁵ the alternative compliance path is available only for waterbody-pollutant combinations for which there is an established TMDL or Water Quality Improvement Plan (WQIP). The requirements and controls specified in the relevant alternative compliance sections closely track the requirements and controls specified in the TMDL or WQIP implementation plans including, as consistent with the implementation plans, refinements and updates based on the experience of the Board and the Permittees in implementing the TMDLs in prior permit terms. Sections C9 through C12, C.14, C.18, and C.19 of this Fact Sheet include a thorough discussion of the bases for these requirements and controls. Because the alternative compliance path follows established TMDLs or WQIP, milestones and deadlines in those TMDLs that occur within the term of the Permit are incorporated into the Permit. In this sense, the alternative compliance path in the Permit is largely the implementation of TMDLs or WQIPs that were duly adopted by the Board and incorporated into the Basin Plan, as is already required by the law even in the absence of an alternative compliance option. (Water Code §13263(a) (waste discharge requirements must implement the Basin Plan); 40 CFR 122.44(d)(1)(vii) (NPDES permits must include water quality-based effluent limits that are consistent with the assumptions and requirements of any available wasteload allocation).)
- The Permit allows alternative compliance where there is no established TMDL or WQIP for one set of waterbody-pollutant combinations. This alternative compliance path is specified in Section C.14.a. The section applies to “the cities of Mountain View and Sunnyvale for discharges that are causing or contributing to exceedances

¹²⁵ Although there is no TMDL for trash, Provision C.10 implements the statewide Trash Amendments, which establish a framework for coming into compliance with the statewide prohibition on trash discharges.

of applicable bacteria water quality objectives in Stevens Creek (both cities), Calabazas Creek (Sunnyvale), and Sunnyvale East Channel/Guadalupe Slough (Sunnyvale).” The requirements, controls, and timelines in Section C.14.a. mirror the requirements, controls, and timelines in bacteria TMDLs established for other waterbody segments in the region. (See Sections C.14.b.-14.d.) Accordingly, the Board relied on the analysis and planning that supported the development of those TMDLs as support for provisions in Section C.14.a.

- The Permit incorporates requirements and incentives for the use of green infrastructure, the adoption of low impact development principles, and multi-benefit regional projects that capture, infiltrate, and reuse stormwater and support a local sustainable water supply. Some of the alternative compliance path provisions specifically identify such projects as means of compliance with the provisions, including Provision C.11 for mercury discharges to San Francisco Bay and Provision C.12 for PCBs discharges to San Francisco Bay. Generally, however, the requirements are layered on top of the alternative compliance provisions, rather than built into provisions C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f. Specifically, all Permittees, and not only Permittees with discharges subject to the alternative compliance path provisions, must comply with section C.3.

As stated above, State Water Board Orders WQ 2015-0075, as amended by Order WQ 2021-0052-EXEC, and 2020-0038 acknowledge that there is more than one acceptable approach to providing for an alternative compliance path in an MS4 Permit. (See, e.g. State Water Board Order WQ 2021-0052-EXEC, p. 64 (“[W]e acknowledge that regional differences may dictate a variation on the [watershed management program] approach.”); State Water Board Order WQ 2020-0038, p. 164 (“This order is not intended to curtail the flexibility of the regional water boards. . . to adopt and develop alternative compliance plans that best fit their particular regions, and does not require modification of programs adopted by other regional water boards.”) While structured differently than the alternative compliance path in the LA County MS4 Permit, the alternative compliance path in provisions C.9 through C.12, C.14, C.18, and C.19.c-f, is nevertheless consistent with the direction in State Water Board Orders WQ 2015-0075, as amended, and 2020-0038 as described below and in the sections of the Fact Sheet discussing the bases for the requirements and controls in those sections.

The requirements of provisions C.9 through C.12, C.14, C.18, and C.19.c-f are ambitious and rigorous because they require Permittees to fully commit to and implement challenging, but achievable, tasks to ultimately meet water quality objectives, including objective interim narrative or numeric effluent limitations. Accordingly, this Order explicitly applies principles 1, 2, and 3 (above) of State Water Board Order WQ 2015-0075, as amended, and provides an alternative path to compliance with Discharge Prohibitions and Receiving Water Limitations for the following pollutant – water body combinations: pesticides and pesticide-caused toxicity in all receiving waters (Provision

C.9); trash in all receiving waters (Provision C.10); mercury in all San Francisco Bay segments and receiving waters in the Guadalupe River watershed (Provision C.11); polychlorinated biphenyls (PCBs) in all San Francisco Bay segments (Provision C.12); fecal indicator bacteria in various impaired water bodies (Provision C.14); sediment in Pescadero and Butano creeks (Provision C.18); and diazinon and chlorpyrifos in the Sacramento/San Joaquin River Delta (Provision C.19.c), methylmercury in the Sacramento/San Joaquin River Delta (Provision C.19.d-e), and pyrethroid pesticides in the Sacramento and San Joaquin river systems (Provision C.19.f).

This rigorous compliance alternative also applies Order WQ 2015-0075, as amended, principle 4. It implements all applicable TMDL requirements and calls for or allows for implementation of trash, mercury, and PCBs controls in watershed and drainage areas where they are most needed and most likely to be effective and promotes and allows use of controls with multiple pollutant benefits. In particular, Provision C.10 allows compliance through use of low impact development and green infrastructure controls that may be implemented for other pollutants, e.g., mercury and PCBs, upon a demonstration that such controls provide full trash capture system equivalency, and alternatively Permittees may use full trash capture systems as a means of meeting provisions C.11 (mercury) and C.12 (PCBs) requirements. Also, by design, provisions C.11 (mercury) and C.12 (PCBs) include consistent categorical control measure requirements, e.g., Source Property Identification and Abatement, Control Measure Implementation in Old Industrial Areas, and Plan and Implement Green Stormwater Infrastructure, based on recognition of the multipollutant benefits of these actions.

However, the watershed-based approach addressing multiple pollutants is less or not appropriate for the pesticides and pesticide-caused toxicity requirements. Consistent with the TMDL wasteload allocation and implementation plan, these requirements are pollution prevention management practices specific to urban use pesticides and apply to all watersheds and drainage areas since urban use pesticides are used everywhere. Similarly, Provision C.14 fecal indicator bacteria requirements for discharges to receiving waters that are or may be impaired by bacteria implement or, where there is no TMDL, are consistent with TMDL requirements, and call for fecal indicator bacteria-specific pollution prevention controls consistent with current knowledge of sources and activities in the watersheds of these receiving waters. Provision C.14 does recognize there will be bacteria reduction benefits associated with control of some trash sources. Although there may be some pesticides and bacteria reduction benefits of low impact development and green infrastructure controls that may be implemented for other pollutants, those benefits are likely minimal.

Order Provision C.3 calls for adoption and implementation of low impact development consistent with Order WQ 2015-0075, as amended, principles 5 and 6. The mercury and PCBs provisions (C.11 and C.12) explicitly recognize and call for use of green infrastructure to meet pollutant load reduction requirements. The trash provisions in C.10 allow use of low impact development green infrastructure as full trash capture

systems, if appropriately designed, operated, and maintained. Although not directly required in the pesticides and fecal indicator bacteria provisions, low impact development principles and development and implementation of green infrastructure plans, including consideration of multi-benefit regional projects, could also have pesticides and bacteria load reduction benefits. However, there are no current available and viable treatment controls, including green infrastructure, that can reduce concentrations of pesticides or fecal bacteria to low levels consistent with applicable water quality objectives.

Consistent with Order WQ 2015-0075, as amended, principle 7, each of the pollutant-specific provisions also contain concrete milestones and deadlines and reporting requirements that provide rigor and accountability. Unlike the MS4 permit evaluated in Order WQ 2015-0075, as amended, where water quality objectives were to be achieved through watershed management plans or programs to be submitted, this Order explicitly sets forth the requirements for achieving over time receiving water limitations instead of relying on plans. As such, it is abundantly transparent as to what is required. The pollutant-specific requirements track the controls and the timelines for attaining the wasteload allocations established in adopted TMDLs; therefore, the analyses supporting the requirements for achieving receiving water limitations over time were provided in the first instance, in a transparent, public process, through the adoption of the TMDLs. Additionally, this Fact Sheet summarizes data and information collected under the prior permit's implementation of the TMDL and additional requirements and provides the analyses supporting additions and adjustments made to the pollutant-specific requirements and controls in this Permit. Moreover, as implementation of the Permit's alternative compliance provisions proceeds, all reports, plans, and other required submittals will be made available to all interested parties and input and feedback from interested parties will be considered in the evaluation of all submittals. State Water Board Order WQ 2015-0075, as amended, requires that an MS4 permit show "through a transparent process" that it has "analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions," but it does not require a specific type or form of analytical exercise to meet this principle. (See, e.g., State Water Board Order WQ 2020-0038, p. 81, acknowledging that evaluations other than modeling are acceptable.) The analyses supporting the TMDLs implemented in the Permit, as well as the additional analyses provided or referred to in this Fact Sheet, meet the direction provided by the State Water Board in principle 7.

The Order also includes monitoring requirements (Provision C.8 and Provision C.14) to assess water body and watershed conditions and effectiveness of control actions towards attainment of water quality standards and to inform selection and implementation of new control actions or adaptive improvements of control actions.

Consistent with the TMDLs, more time than the term of the Order will be necessary to attain water quality standards for mercury, PCBs, and fecal bacteria. In these cases, the associated Order provision includes an additional requirement for the Permittees to

submit updated plans of additional or improved control actions and schedule of implementation to attain water quality standards and TMDL wasteload allocations for the Water Board's consideration of numerical or narrative WQBELs in the subsequent order. It also requires updates to corresponding reasonable assurance analyses demonstrating sufficient control measures will be implemented to attain the TMDLs and water quality standards.

With respect to compliance with the trash discharge prohibition, the Trash Amendments provide that Permittees "with NPDES permits that contain specific requirements for the control of Trash that are consistent with these Trash Provisions shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements." The requirements of this Order are consistent with the Trash Provisions, which include the water quality objective for trash, the discharge prohibition, and the implementation requirements of the Trash Amendments (see Fact Sheet for Provision 10).

C.2. Municipal Operations

Legal Authority

The following legal authority applies to Provision C.2:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii) and 402(a), California Water Code (CWC) sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires “[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires “[a] description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires “[a] description of procedures to assure that flood management projects assess the impacts on the water quality of receiving waterbodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) requires “[a] description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires “[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways [sic] and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.2

- C.2-1** Municipal maintenance activities are potential sources of pollutants unless appropriate inspection, pollutant source control, and cleanup measures are implemented during routine maintenance works to minimize pollutant discharges to storm drainage facilities.

Discharges from paved surfaces, such as roads, parking lots, parks, sidewalks, landscaping, and corporation yards, can contain many pollutants, such as sediment, copper, petroleum products, trash, and pathogens. Provision C.2 requires the Permittees to designate minimum BMPs for all municipal facilities and activities as part of their ongoing pollution prevention. This Provision sets the minimum implementation level for such preventive measures, but does not bar Permittees from implementing additional pollution prevention actions.

Municipal maintenance personnel play a vital role in minimizing stormwater pollution because they work directly on municipal storm drains and at other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain. Maintenance personnel also play an important role in identifying, reporting, and cleaning up illicit discharges.

- C.2-2** Road construction and other municipal activities can disturb soil and drainage patterns in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. In particular, poorly designed roads can act as man-made drainages that carry runoff and sediment into natural streams, degrading water quality.

Provision C.2 also requires the Permittees to implement effective BMPs for the following rural works maintenance and support activities: (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport; (b) Identifying and prioritizing rural roads maintenance on the basis of soil erosion potential, slope steepness, and receiving water habitat resources; (c) Developing and implementing road and road crossing (e.g., bridge and culvert) construction designs that do not impact creek functions, do not create a migratory fish passage barrier, where migratory fish are present, and do not lead to stream bank instability; (d) Developing and implementing an inspection program to maintain road structural integrity and prevent impacts to water quality; and (e) Adequately maintaining rural roads adjacent to streams and riparian habitat to reduce erosion, such as by replacing damaging shotgun culverts, re-grading roads to slope outward where consistent with road engineering safety standards, and installing water bars.

Specific Provision C.2 Requirements

Provision C.2.a-e. (Operation and Maintenance of Municipal Separate Storm Sewer Systems (MS4) facilities) requires that the Permittees implement appropriate pollution control measures during maintenance activities and to inspect and, if necessary, clean municipal facilities, such as conveyance systems, pump stations, and corporation yards, before the rainy season. The requirements will assist the Permittees to prioritize tasks, implement appropriate BMPs, evaluate the effectiveness of the implemented BMPs, and compile and submit annual reports.

Provision C.2.d. (Stormwater Pump Stations). Stormwater pump stations can be sources of pollutants including low dissolved oxygen, oxygen-demanding substances, and trash to receiving waters. As described below, the Permit requires Permittees to continue to inspect their pump stations and, as needed, take corrective actions to prevent adverse water quality impacts.

Water Board staff investigated the occurrence of low salinity and dissolved oxygen (DO) conditions in Old Alameda Creek (Alameda County) and Alviso Slough (Santa Clara County) in September and October of 2005. Water Board staff became aware of this problem in their review of receiving water and discharge sampling conducted by the U.S. Geological Survey as part of its routine monitoring on discharges associated with the former salt ponds managed by the U.S. Fish and Wildlife Service in Santa Clara County and the California Department of Fish and Wildlife in Alameda County.

Discharge of black-colored water from the Alvarado pump station to Old Alameda Creek was observed at the time of the data collection on September 7, 2005, confirming dry weather urban runoff as the source of the documented violations of the 5 mg/L (DO) water quality objective. Such conditions were measured again on September 21, 2005.

On October 17, 2005, waters in Alviso Slough were much less saline than the salt ponds and had the lowest documented dissolved oxygen of the summer, suggesting a dry weather urban runoff source. The (DO) sag was detected from surface to bottom at 2.3 mg/L at a salinity of less than 1 part per thousand (ppt), mid-day, when oxygen levels should be high at the surface. The sloughs have a typical depth of 6 feet.

Inspections of stormwater pump stations, which transport water from the storm drain system to receiving waters and operate during both dry and wet weather, indicate that pump stations may represent an overlooked source of controllable pollution, in particular low dissolved oxygen (DO) and trash, to the San Francisco Bay Estuary and its tidal sloughs. The discharges of dry weather urban runoff from these pump stations were historically not managed to protect water quality and surveillance monitoring detected measurable negative water quality consequences of this current state of pump station management.

Previous iterations of the MRP required Permittees to inventory and inspect pump stations during the dry season to identify and correct low-DO discharges. Permittees

now have inventories of pump stations, and this permit continues the requirements to inspect pump stations and implement corrective action if receiving water is found to have low DO. Pump stations within the storm drain system and pump stations that discharge to dry creeks are excluded because any low DO in discharges will not impact water quality.

This permit also continues to require Permittees to inspect all pump stations for trash and evidence of illicit discharges, and maintain or replace oil-absorbent booms, in order to comply with the prohibition on non-stormwater discharges.

40 CFR 122.26(d)(2)(I)(f) requires Permittees to carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions, including the prohibition on illicit discharges to the MS4. Pump stations cannot contribute discharges with dissolved oxygen (DO) level below 3 mg/L. Previous pump station reporting shows that implementing corrective actions (i.e., BMPs) prior to the pumps, combined activating the pumps to discharge collected water, as opposed to simply allowing it to overflow, aerates the water to a DO level of at least 3 mg/L. Thus, this Permit removes the specific DO monitoring requirements and allows the Permittees greater flexibility to ensure that all water discharged from pumps stations is at least 3 mg/l. The reporting requirement has also been removed from this Permit, but Permittees must maintain any sampling records and make them available upon request.

Provision C.2.f. (Corporation Yard BMP Implementation). This provision continues the requirement for Permittees to implement BMPs in site-specific Stormwater Pollution Prevention Plans (SWPPPs) to minimize pollutant discharges in stormwater and non-stormwater discharges in municipal corporation yards. SWPPPs, which Permittees have been required to have in place since 2010, should have specific BMPs for different functions of the corporation yard and provide guidance for regular inspections to ensure that appropriate BMPs are implemented. After Water Board staff and U.S. EPA staff inspections indicated that despite the use of SWPPPs, corporation yards had actual and/or potential discharges, the Water Board required Permittees to customize their SWPPPs and conduct routine inspections in different areas of the corporation yard and at least one inspection prior to the start of the rainy season. However, subsequent annual reports indicated that Permittees' inspections were not consistently scheduled at times when they would detect potential discharges or runoff issues prior to the start of the rainy season. In addition, Permittees' reporting on corrective actions was too spotty for the Water Board to make compliance determinations. Therefore, this Permit clearly identifies the timeframe for the annual inspections to occur and requires corrective actions to be implemented before the next rain event, but no later than 10 business days after the potential and/or actual discharges are discovered. This is consistent with the timeframe for implementation of corrective actions in provisions C.4. and C.5.

Provision C.2.g. Storm Drain Inlet Marking. This requirement has been moved from Provision C.7, Public Information and Outreach, of the Previous Permit (Order No. R2-

2015-0049, as amended). Storm drain inlet marking is a long-established program of outreach to the public on the nature of the storm drain system, providing the information that the storm drain system connects directly to creeks and the Bay and does not receive treatment. Past public awareness surveys have demonstrated that this BMP has achieved significant impact in raising awareness in the general public and meets the MEP standard as a required action. Therefore, the Permit continues to require all municipally maintained inlets to be legibly labeled with a “no dumping” message. Volunteer storm drain marking events have additional public involvement value and may further raise awareness and compliance.

Provision C.2.h. Staff Training. This provision continues to require Permittees to conduct annual trainings for municipal staff. Trainings are necessary to keep staff current on implementation and maintenance of BMPs for municipal operations to control stormwater discharges. Since municipal employees are largely responsible for implementing Provision C.2, staff training is an essential component of controlling discharges from municipal operations.

C.3. New Development and Redevelopment

Legal Authority

Broad Legal Authority: CWA Sections 402(p)(3)(B)(ii-iii), CWA Section 402(a), CWC Sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires “[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(2) requires “[a] description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment. Such plan shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires “[a] description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires “[a] description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.”

Fact Sheet Findings in Support of Provision C.3

C.3-1 Urban development begins at the land use planning phase; therefore, this phase provides the greatest cost-effective opportunities to protect water quality in new development and redevelopment. When a Permittee incorporates policies and principles designed to safeguard water resources into its General Plan and development project approval processes, it has taken a critical step toward the preservation of local water resources for current and future generations.

C.3-2 Provision C.3. is based on the premise that Permittees are responsible for considering potential stormwater impacts when making planning and land use decisions for new development and redevelopment, including road improvement projects, and determining how to operate and maintain streets, roads, and highways, including reducing pollutants discharged from them. The goal of Provision C.3. is for Permittees to use their planning authority to reduce

pollutant discharges and runoff flow into the storm drain system primarily through the implementation of low impact development (LID) techniques.

- C.3-3** To accomplish this goal, Permittees must require new development and redevelopment projects to implement appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flow from these projects. Permittees are also required to implement their Green Infrastructure Plans for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs and other storm drain infrastructure elements. Provision C.3. is not intended to restrict or control local land use decision-making authority.
- C.3-4** Certain control measures implemented or required by Permittees for urban runoff management might create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative efforts among Permittees, local vector control agencies, Water Board staff, and the State Department of Public Health are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.
- C.3-5** The Water Board recognized in its Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control (Resolution No. 94-102) that urban runoff treatment wetlands that are constructed and operated pursuant to that Resolution and are constructed outside a creek or other receiving water are stormwater treatment systems and, as such, are not waters of the United States subject to regulation pursuant to CWA Sections 401 or 404. This is consistent with the stayed 2015 Clean Water Rule exempting stormwater control features from the definition of “waters of the U.S.” (80 Fed. Reg. 37054 (June 29, 2015).) This Permit requires Permittees to ensure that constructed wetlands installed by Regulated Projects are consistent with Resolution No. 94-102 and the operation and maintenance requirements contained therein.
- C.3-6** The Permit requires Permittees to ensure that pervious pavement systems of 3,000 square feet or more, onsite, joint, and offsite stormwater treatment systems, and HM controls installed by Regulated Projects are properly operated and maintained for the life of the Projects.

Specific Provision C.3 Requirements

Provision C.3.a. (New Development and Redevelopment Performance Standard Implementation) continues the requirements related to having adequate legal authority to address storm water, development review and permitting, environmental review, training, and outreach requirements of MRP 1.

Provision C.3.b. (Regulated Projects) establishes the different categories of new development and redevelopment projects that Permittees must regulate under Provision C.3. These categories are defined on the basis of the land use and the amount of impervious surface created and/or replaced by the project because all impervious surfaces contribute pollutants to stormwater runoff and certain land uses contribute more pollutants. Impervious surfaces can neither absorb water nor remove pollutants as the natural, vegetated soil they replaced can. Also, urban development creates new pollution by bringing higher levels of car emissions that are aerially deposited, car maintenance wastes, pesticides, household hazardous wastes, pet wastes, and trash, which can all be washed into the storm sewer.

This permit is a 4th generation permit containing stormwater treatment requirements for development projects. Past permits have grandfathered development projects approved prior to those permits' effective dates, essentially exempting the projects and allowing them to provide no or insufficient stormwater treatment. The Water Board believes a small number of these development projects that were approved more than a decade ago have still not begun construction. A decade is sufficient time to justify requiring the Permittees to revise and update these stagnant development permits to include current LID treatment requirements. Therefore, this provision does not grandfather development projects approved with no stormwater treatment requirements and that have not begun construction. However, this provision allows exemptions for some of these previously approved projects in situations where the Permittees lack legal authority to retroactively change their previous approvals. For a pending Regulated project that has not been approved as of June 30, 2023, and a Permittee has no legal authority to require changes under Government Code sections 66474.2 or 65589.5, subd. (o), this provision does not require the Permittee to require compliance with the new requirements of this Order, because it cannot.

To confirm that the total number of projects previously approved without any Provision C.3-compliant stormwater treatment is indeed small, Provision C.3.b.iv.(1) includes a requirement for Permittees to provide in their 2023 Annual Report a complete list of these types of development projects. For each such Project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). This reporting requirement only applies to Permittees that have Projects subject to Provision C.3.b.i.(2).

Regulated Projects approved under previous permits with non-LID stormwater treatment measures in compliance with the hydraulic sizing criteria of Provision C.3.d. will continue to be grandfathered.

Provision C.3.b clarifies that sidewalks and any other portions of the public right of way that are developed or redeveloped as part of a Regulated Project must be included in the total impervious surface count when evaluating whether projects meet the Regulated Project thresholds, and when evaluating the area that must be treated by the Regulated Project. These impervious surfaces generate urban stormwater pollutants in

the form of aeriably-deposited particulates and pollutants deposited by bicyclists (e.g., bicycle tire wear particles, and petroleum products) and pedestrians (e.g., PAH loading from adjacent roadways, and trash), they are a source of thermal pollution of runoff (which may contribute to adverse impacts threatening cold water wildlife habitat), and they contribute to hydromodification of receiving waters.¹²⁶

The pavement maintenance practices defined in Provision C.3.b.ii.(1)(b) are adapted from Appendix 1 of the current (effective August 1, 2019) Western Washington Phase II MS4 Permit.¹²⁷ These definitions clarify which rehabilitative road maintenance/reconstruction practices do and do not qualify as Regulated Projects. For additionally clarity, bituminous surface treatments have been defined in the Glossary.

- Upgrading from a bituminous surface treatment with a layer of asphalt or concrete is an excluded pavement maintenance practice because a bituminous surface treatment itself results in an impervious surface, and therefore that upgrade will not produce a new impervious surface (as long as it does not also involve the removal or replacement of the pavement to the base course or lower). For example, if there is an existing dirt or gravel surface, over which there is an existing bituminous surface treatment, then the subsequent application of a new asphalt or concrete layer above the existing bituminous surface treatment is considered an excluded pavement maintenance practice because it does not produce a new impervious surface.

To preclude confusion, Provision C.3.b.ii.(1)(b)(iii) provides a redundant caveat that the listed pavement maintenance practices are included (i.e., not excluded) in the Road Reconstruction Projects category only if they trigger all the criteria specified in Provision C.3.b.ii.(5), including the criteria regarding contiguousness.

Provision C.3.b.ii.(1)(b)(iv) clarifies that, in the scenario in which a project includes a portion of work that is exempted (e.g., applying a bituminous surface treatment to an existing asphalt layer) and a portion of work that is *not* exempted (e.g., removing and replacing asphalt pavement to the base course, or reconstructing a sidewalk), the portion of work that is not exempted must be evaluated as to whether it meets the criteria for a Regulated Project. In other words, a Permittee may not exclude such a project altogether by categorizing it as the exempted portion; what must be evaluated is whether the non-exempted portion meets the criteria for a Regulated Project.

Public right of way projects (other than public road projects) are explicitly included within the definitions for Other Development Projects and Other Redevelopment Projects. Public right of way projects (other than public road projects) do not have the same constraints and challenges that public road projects have.

¹²⁶ *The pollution conveyed by urban runoff: A review of sources*. December 2019. Alexandra Muller, Helene Osterlund, Jiri Marsalek, Maria Viklander. <https://doi.org/10.1016/j.scitotenv.2019.136125>

¹²⁷ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater>

- Language has been added which clarifies that piecemeal public works projects which are not part of Regulated Projects – examples given are sidewalk gap closures, sidewalk section replacement, and ADA curb ramps (certain pavement maintenance practices within the road prism, such as pothole patching, are already excluded pursuant to Provision C.3.b.ii.(1)(b)(ii)) – are excluded from the Other Redevelopment Projects category, unless they create and/or replace 5,000 contiguous square feet or more of impervious surface. These types of public works projects are typically included in municipalities' CIPs as a budget line item for small patchwork projects to be completed through their jurisdictions, which individually may not create and/or replace 5,000 contiguous square feet of impervious surface, but which may (if combined together) create and/or replace 5,000 non-contiguous square feet of impervious surface. As we do not intend to consider the latter a Regulated Project, we have added clarifying language to Provision C.3.b.ii.(5) Other Redevelopment Projects, because this is the category under which these projects would likely qualify.
 - Sidewalk gap closures typically consist of the filling of gaps between sections of sidewalks, with pavement. For example, where a block has a sidewalk, but it is not continuous because it is missing across a parcel, completing the sidewalk across that parcel.
 - Sidewalk section replacement typically consists of repairing or replacing sidewalk sections that have been damaged or buckled by tree roots, tectonic action, etc.

Private road reconstruction projects are explicitly included within the definition for Other Redevelopment Projects. Permittees do not bear the burden of the design and capital construction costs of private road projects, and Permittees are able to recoup all or a significant portion of the cost of accounting for private road projects, for example, by charging project application review fees. Therefore, private road reconstruction projects are treated the same as all other types of private non-road reconstruction projects.

The Regulated Project category for Road Projects has been renamed from the Previous Permit to New or Widened Road Projects, and applies to both public and private projects.

The impervious surface thresholds for Other Development Projects, Other Redevelopment Projects, and New and Widened Road Projects are set at 5,000 square feet. These thresholds are MEP for this Permit and its Permittees, because:

- (1) They align with the impervious surface area threshold of 5,000 square feet in Provision C.3.b.ii.(1) Special Land Use Categories, which has been in place since the Previous Permit term (Order No. R2-2015-0049).
- (2) The 5,000 square foot threshold (or lower thresholds) for Regulated Projects is consistent with numerous other MS4 permits, including, but not limited to: the California State Water Board's NPDES Permit for WDRs for Stormwater

Discharges from Small MS4s (effective July 1, 2013),¹²⁸ the California Regional Water Quality Control Board Central Valley Region's NPDES and WDR General Permit for Discharges from MS4s (effective October 1, 2016),¹²⁹ the California Regional Water Quality Control Board Los Angeles Region's Regional MS4 NPDES Permit for Los Angeles and Ventura Counties,¹³⁰ the California Regional Water Quality Control Board Central Coast Region's NPDES MS4 Permit for the City of Salinas (effective October 1, 2019),¹³¹ the City of Portland's NPDES MS4 Permit (effective January 31, 2011),¹³² the State of Oregon's NPDES MS4 General Permit (effective March 1, 2019),¹³³ the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s (effective August 1, 2019),¹³⁴ Eastern Washington's NPDES and State Waste Discharge General Permit for Discharges from Small MS4s (effective August 1, 2019),¹³⁵ Western Washington's NPDES and State Waste Discharge General Permit for Discharges from Small MS4s (effective August 1, 2019),¹³⁶ the City of Salem's NPDES MS4 Discharge Permit (effective December 30, 2010),¹³⁷ the City of Chicago's Stormwater Management Plan¹³⁸ for the State of Illinois's General Permit for Discharges from Small MS4s (effective March 1, 2016),¹³⁹ U.S. EPA's NPDES Stormwater Permit for the Boise/Garden City Area (effective October 1, 2021),¹⁴⁰ the City of Eugene's NPDES MS4 Discharge Permit (effective December 30, 2010),¹⁴¹ U.S. EPA's

¹²⁸ https://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.html

¹²⁹ https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0040_ms4.pdf

¹³⁰ Order No. R4-2021-0105, NPDES Permit No. CAS004004, https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/

¹³¹ https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/salinas.html

¹³² <https://www.portlandoregon.gov/bes/37485>

¹³³ <https://www.oregon.gov/deq/FilterPermitsDocs/ms4ph2genpermit.pdf>

¹³⁴ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-Stormwater-Phase-I-Permit#:~:text=The%20Phase%20I%20Municipal%20Stormwater,populated%20areas%20in%20the%20state>

¹³⁵ [https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Eastern-Washington-Phase-II-Municipal-Stormwat-\(1\)](https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Eastern-Washington-Phase-II-Municipal-Stormwat-(1))

¹³⁶ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater>

¹³⁷ <https://www.cityofsalem.net/Pages/ms4-permits-and-annual-reports.aspx#:~:text=The%20City%20of%20Salem%20operates,directly%20to%20our%20local%20streams>

¹³⁸ https://www.chicago.gov/content/dam/city/depts/water/general/Engineering/MS4/MS4_Stormwater_Plan.pdf

¹³⁹ <https://www2.illinois.gov/epa/topics/forms/water-permits/storm-water/Pages/ms4.aspx>

¹⁴⁰ <https://www.epa.gov/npdes-permits/npdes-stormwater-permit-boisegarden-city-area-ms4s-idaho>

¹⁴¹ <https://www.eugene-or.gov/476/NPDES-Municipal-Stormwater-Permit>

Washington, D.C. NPDES MS4 Permit (effective June 22, 2018),¹⁴² and the State of Maryland's NPDES General Permit for Discharges from Small MS4s (effective October 31, 2018).¹⁴³ The 5,000 square foot threshold is, therefore, consistent with reducing the discharge of pollutants from storm water to the MEP.

- (3) The Permittees submitted a report¹⁴⁴ that the benefit provided by additionally capturing Regulated Projects in the 5,000-10,000 square foot range would likely provide similar benefit (with respect to acres of impervious surface treated) and similar cost (with respect to the burden on Permittees to review project applications and conduct inspections as well as other administrative burdens) as compared to Regulated Projects already captured, such as the 10,000-15,000 square foot range and the 15,000-20,000 square foot range.
- (4) According to the Permittees' 2019 Green Infrastructure Plans,¹⁴⁵ existing and future Regulated Projects and Non-Regulated, public and private, development and redevelopment projects under the Previous Permit will result in about 2 percent of impervious surface collectively retrofitted in the five Permittee counties with clean water controls by 2020, 4 percent by 2030, and 6 percent by 2040. That pace of retrofit would not address stormwater pollutants discharged from Permittees' jurisdictions to the MEP. Therefore, in combination with other changes proposed for Provision C.3, this expansion of the Regulated Project threshold provides a significant incremental step towards increasing the amount of impervious surface within Permittees' jurisdictions retrofitted by clean water controls, regionwide.
- (5) Permittees are able to recoup all or a significant portion of the cost of accommodating additional Regulated Projects in the 5,000-10,000 square foot range, for example, by charging fees for project application review and inspection.
- (6) U.S. EPA supports the 5,000 square foot threshold for impervious surface area, as it is well understood that untreated stormwater contributes to the degradation of the San Francisco Bay and local creeks and streams, and dense urbanization,

¹⁴² <https://www.epa.gov/npdes-permits/dc-municipal-separate-storm-sewer-system-ms4>

¹⁴³

https://mde.maryland.gov/programs/water/stormwatermanagementprogram/pages/npdes_ms4_new.aspx

¹⁴⁴ "'White Paper' on Provision C.3 in MRP 2.0," Final Report, Bay Area Stormwater Management Agencies Association, February 27, 2015.

¹⁴⁵

https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/MRP/GIPlans2019.html

infrastructure, and impervious surfaces ring San Francisco Bay and contribute to an increase of contaminants that degrade receiving waters.^{146,147}

The Permit includes language in Provision C.3.b.ii.(4) clarifying that a gravel surface is an impervious surface, except when it is constructed as part of appropriately designed pervious pavement system. Provision C.3.b.ii.(4) also identifies situations when a gravel surface may be excluded from treatment requirements, reflecting their landscape context, which is expected to often allow drainage to a vegetated area or other pervious area that is at least half the size of the contributing graveled surface. Gravel is considered impervious because it is typically compacted by design or by use. U.S. EPA has defined as impervious surfaces "...areas such as gravel roads...that will be compacted through design or use to reduce their impermeability."¹⁴⁸ It further has defined impervious surfaces as "[a]ny surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures, artificial turf and compacted gravel or soil."¹⁴⁹ The Ohio EPA includes gravel roads in its required calculations for impervious surfaces.¹⁵⁰ Municipalities including Asheville and Durham, North Carolina, and Avon, Ohio, consider gravel driveways impervious for the purpose of calculating those cities' stormwater utility fees, because compaction results in increased runoff from those surfaces.¹⁵¹

The Road Reconstruction Projects category (projects creating or replacing greater than or equal to one contiguous acre of impervious surface) is distinct from the New and Widening Road Projects category (which addresses only new road projects) because it addresses the significant reconstruction of existing public roads (reconstruction of private roads is addressed separately, in the Other Development Projects category). The definition of contiguous includes project areas interrupted by cross streets or intersections. Provision C.3.b.ii.(1)(b) distinguishes which public road reconstruction projects are and are not excluded.

- The treatment requirements for Road Reconstruction Projects are consistent with other MS4 permits, including, but not limited to: the City of Portland's NPDES MS4 Permit (effective January 31, 2011),¹³² the State of Oregon's NPDES MS4 General

¹⁴⁶ SFEI, Wu, J., Trowbridge, P., Yee, D., McKee, L., and Gilbreath, A., 2018.

¹⁴⁷ Regional Monitoring Program Small Tributaries Loading Strategy: SFEI, McKee et al., 2006.

¹⁴⁸ U.S. EPA, July 2016. Summary of State Post Construction Stormwater Standards, p.13.

¹⁴⁹ Ibid., p.19

¹⁵⁰ Ohio EPA, Oct. 2018. Post-Construction Storm Water Questions and Answers, p.1. "What surfaces should be considered impervious? (...) rooftops, paved or gravel roads..." and Ohio EPA, Oct. 2019. Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays, p.1, "Paved or gravel roads...must also include post-construction storm water management."

¹⁵¹ <https://www.ashevilenc.gov/department/public-works/stormwater-services-utility/stormwater-fees/> <https://www.durhamnc.gov/864/Impervious-Surface>. Durham specifically references compacted gravel. <https://www.cityofavon.com/DocumentCenter/View/4298/Exhibit-A---Ordinance-No-105-17-Chapter-1056-FINAL?bidId=>. "Impervious surfaces include...compacted gravel surface[s]" (p.2).

Permit (effective March 1, 2019),¹³³ the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s (effective August 1, 2019),¹³⁴ Eastern Washington's NPDES and State Waste Discharge General Permit for Discharges from Small MS4s (effective August 1, 2019),¹³⁵ Western Washington's NPDES and State Waste Discharge General Permit for Discharges from Small MS4s (effective August 1, 2019),¹³⁶ the City of Salem's NPDES MS4 Discharge Permit (effective December 30, 2010),¹³⁷ the City of Chicago's Stormwater Management Plan¹³⁸ for the State of Illinois's General Permit for Discharges from Small MS4s (effective March 1, 2016),¹³⁹ U.S. EPA's NPDES Stormwater Permit for the Boise/Garden City Area (effective October 1, 2021),¹⁴⁰ the City of Eugene's NPDES MS4 Discharge Permit (effective December 30, 2010),¹⁴¹ U.S. EPA's NPDES MS4 Permit for Washington, D.C. (effective June 22, 2018),¹⁴² and the State of Maryland's NPDES General Permit for Discharges from Small MS4s (effective October 31, 2018).¹⁴³

The Road Reconstruction Regulated Projects category – in addition to the Numeric Implementation retrofit requirements in Provision C.3.j.ii.(2) – is intended to address the significant pollutant loading and hydrologic impact to receiving waters from Permittees' existing public roads and to clarify the amount of road reconstruction that is redevelopment justifying an investment of resources to retrofit the road with clean water controls.

In subsequent Permits, the Water Board may consider removing or revising Provision C.3.b.ii.(5)(c), which allows the Permittees to use alternative sizing criteria for Road Reconstruction Projects, as well as Provision C.3.b.ii.(5)(d), which allows the Permittees to credit the acreage of impervious surface created or replaced for Road Reconstruction Projects towards the Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2).

This Regulated Project category includes utility trenching projects which are - on average, over the entire length of the project - greater than or equal to 8 feet wide. This is intended to include utility trenching projects that alter a portion of the roadway sufficient to warrant retrofit with clean water controls. The Water Board will use information collected during the Permit term to consider modifying the utility trenching criteria in a subsequent permit.

The Large Detached Single-Family Home Projects category for Regulated Projects captures such projects that create and or replace 10,000 square feet or more of impervious surface, collectively over the entire project site, and that are not part of a larger development or redevelopment plan. This Regulated Project category coincides with Provision C.3.i, which prescribes site design measures for small detached single-family home projects which create and/or replace 2,500-10,000 square feet of impervious surface. Recognizing that SB 9 also allows for the construction of an

accessory dwelling unit (ADU) on a lot with an existing single-family home, without subdividing the lot, C.3.b.ii.(6)(d) clarifies that such an action would fall under the large single-family home threshold of 10,000 sq. ft. of impervious surface. This category for Regulated Projects is necessary and MEP because:

- (1) Large Detached Single-Family Home Projects can cause the same urban runoff pollutant and hydromodification impacts that projects of similar sizes in any of the other Regulated Projects categories can produce, because of the created/replaced impervious surface, because those surfaces are similar in nature to other pollutant-generating surfaces in the urban environment, and because aerially deposited urban pollutants are deposited and discharged from those projects to the MS4. Additionally, when flows from these projects flow on-land (e.g., along public streets, ditches and gutters) prior to entering the MS4 system and discharging to receiving waters, they can mobilize stormwater pollutants from those surfaces, eventually transporting them to receiving waters.
- (2) In certain Permittees' jurisdictions, a significant portion of development and redevelopment projects consists of large detached single-family home projects because a significant portion of those Permittees' land use is large lot single-family residential.¹⁵² Therefore, this new category has been added to control the pollutant discharges associated with this category of development and redevelopment.
- (3) Permittees are able to recoup all or a significant portion of the cost of accommodating this new category of Regulated Projects, for example, by charging project application review and inspection fees.

¹⁵² For example: The City of Los Altos' zoning map is dominated by residential zoning, and within that residential zoning, the majority of lots have a minimum lot size of 20,000 to 40,000 square feet: (https://www.losaltosca.gov/sites/default/files/fileattachments/community_development/page/39021/los_altos-land_use_final_w_labels-24x36-20181026.pdf); the Town of Los Altos Hills's zoning map is dominated by residential zoning, and all residential lots have a minimum lot size of one acre: (http://www2.lynxgis.com/Html5Viewer/Index.html?configBase=http://www2.lynxgis.com/Geocortex/Essentials/REST/sites/Los_Altos_Hills/viewers/LAH/virtualdirectory/Resources/Config/Default); the Town of Atherton's zoning map (other than park space) is dominated by residential zoning, and within that residential zoning, the majority of lots have a minimum lot size of one acre, and the remainder have a minimum lot size of 10,000-15,000 square feet: (<https://www.ci.atherton.ca.us/209/Maps>); the Town of Woodside's zoning map (ignoring conservation areas and park space) is dominated by residential zoning, and within that residential zoning, the majority of lots have a minimum lot size of one or three acres, and the remainder have a minimum lot size of 20,000 square feet: (<https://www.woodsideside.org/planning/town-woodside-zoning-map>); the Town of Portola Valley's zoning map is dominated by residential zoning, and within that residential zoning, the majority of lots have a minimum lot size of at least one acre, and the remainder have a minimum lot size of 15,000-20,000 square feet: (<https://www.portolavalley.net/home/showpublisheddocument/6770/635634073606070000>; https://library.municode.com/ca/portola_valley/codes/code_of_ordinances); and the Town of Hillsborough's zoning map is dominated by a single residential zone, which has a minimum lot size of half an acre: (<https://isd.smcgov.org/gis-data-download>).

- (4) There are many other MS4 Permits that consider it MEP to include analogous treatment requirements for large detached single-family home projects, including, but not limited to: the Los Angeles Regional Water Board's Regional MS4 NPDES Permit (effective September 11, 2021),¹⁵³ the City of Portland's NPDES MS4 Permit (effective January 31, 2011),¹³² the State of Oregon's NPDES MS4 General Permit (effective March 1, 2019),¹³³ the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s (effective August 1, 2019),¹³⁴ Western Washington's NPDES and State Waste Discharge General Permit for Discharges from Small MS4s (effective August 1, 2019),¹³⁶ the City of Salem's NPDES MS4 Discharge Permit (effective December 30, 2010),¹³⁷ the City of Eugene's NPDES MS4 Discharge Permit (effective December 30, 2010),¹⁴¹ U.S. EPA's NPDES MS4 Permit for Washington, D.C. (effective June 22, 2018),¹⁴² and the State of Maryland's NPDES General Permit for Discharges from Small MS4s (effective October 30, 2018).¹⁴³ The 10,000 square foot threshold for this category is, therefore, consistent with reducing the discharge of pollutants from stormwater to the MEP.
- (5) U.S. EPA Region 9 supports the expansion of these Regulated Project categories, as it is well understood that untreated stormwater contributes to the degradation of the San Francisco Bay and local creeks and streams, and dense urbanization, infrastructure and impervious surfaces ring San Francisco Bay and contribute to an increase of contaminants that degrade receiving waters.^{146,147}

Provision C.3.b.iii Implementation Level directs the Permittees to implement the Regulated Project definitions in Provision C.3.b.ii beginning July 1, 2023.

Prior to July 1, 2023, the Regulated Project definitions in Provision C.3.b.ii in Attachment I, which are requirements from the Previous Permit, are effective and apply.

The purpose of this delayed implementation date for Provision C.3.b.ii is to allow Permittees the time needed to arrange all relevant planning authorities and municipal processes, train their staff, etc., regarding changes to Provision C.3.b.ii relative to the Previous Permit.

Provision C.3.c (Low Impact Development (LID)) recognizes LID as a cost-effective, beneficial, holistic, integrated stormwater management strategy.¹⁵⁴ The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed

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https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/regional_permit.html

¹⁵⁴ U.S. EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (Publication Number EPA 841-F-07-006, December 2007)

http://water.epa.gov/polwaste/green/upload/2008_01_02_NPS_lid_costs07uments_reducingstormwatercosts-2.pdf

areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as preserving undeveloped open space, rain barrels and cisterns, green roofs, pervious pavement systems, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. This is a standard, current, ordinary, and regular practice being implemented in numerous jurisdictions in California, the U.S., and internationally, including: the Permittees' jurisdictions, Los Angeles, San Diego, San Francisco, Portland, OR, Seattle, Minneapolis, Milwaukee, Kansas City, Chicago, New York City, Philadelphia, Auckland, New Zealand, Chinese "sponge cities" such as Wuhan and Changde, and others.

This Provision sets forth a three-pronged approach to LID with source control, site design, and stormwater treatment requirements. The concepts and techniques for incorporating LID into development projects, particularly for site design, have been extensively discussed in BASMAA's Start at the Source manual (1999) and its companion document, Using Site Design Techniques to Meet Development Standards for Stormwater Quality (May 2003), as well as in various other LID reference documents.

- **Provision C.3.c.i.(1)** lists source control measures that must be included in all Regulated Projects as well as some that are applicable only to certain types of businesses and facilities. These measures are recognized nationwide as basic, effective techniques to minimize the introduction of pollutants into stormwater runoff.
- **Provision C.3.c.i.(2)(a)** lists site design elements that must be implemented at all Regulated Projects. These design elements are basic, effective techniques to minimize pollutant concentrations in stormwater runoff as well as the volume and frequency of discharge of the runoff. One design element requires each Regulated Project to include at least one site design measure from a list of six that includes recycling of roof runoff, directing runoff into vegetated areas, and installation of pervious pavement systems instead of traditional paving. All these measures serve to reduce the amount of runoff and its associated pollutants being discharged from the Regulated Project.
- **Provision C.3.c.i.(2)(b)** requires the Permittees to implement design specifications for pervious pavement systems. Design specifications are necessary because improperly designed and engineered pervious pavement systems may cause flooding and the discharge of insufficiently treated stormwater runoff.
- **Provision C.3.c.i.(2)(c)** requires each Regulated Project and all projects implemented pursuant to Provision C.3.j to treat 100 percent of the Provision C.3.d.

runoff with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

- **Provision C.3.c.i.(2)(c)(i)** defines LID treatment measures as harvesting and use, infiltration, evapotranspiration, or biotreatment.

The Permittees completed a “White Paper” on Provision C.3. on February 27, 2015.¹⁵⁵ The White Paper concluded that the pollutant removal performance of biotreatment facilities, overall and on average, is equivalent or better than the likely real-world performance of harvest and use facilities and as good as the likely performance of infiltration facilities when considered over the long term. The White Paper also noted that biotreatment facilities require less maintenance and are less prone to failure than harvest and use facilities, and in some cases, are also preferable to direct infiltration facilities.

- **Provision C.3.c.i.(2)(c)(ii)** requires biotreatment systems to meet minimum performance specifications in order to be considered as LID treatment. This subprovision also requires biotreatment soil media to meet the current minimum specifications developed and included in MRP 1.¹⁵⁶ However, this subprovision recognizes that the current soil media specifications may need to be modified because of variability in climate, rainfall, and compost composition among the different counties. Therefore, this subprovision allows for the Permittees to collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the current soil media minimum specifications, subject to the Executive Officer’s approval.
- **Provision C.3.c.i.(2)(c)(ii)(a)** prompts the formation of a workgroup to discuss and investigate the pollutant removal effectiveness and hydrologic equivalency of – and suggested criteria for – high flow-rate media treatment systems in combination with retention/detention measures such as silva cells and structural soils, as compared to conventional bioretention, specifically for use in projects with significant technical site constraints. The workgroup should consider issues including: the MEP standard in relation to the use of such systems; the pollutant removal benefits and hydrologic criteria associated with the MRP’s LID design approach and which are included in other MS4 permits, such as the Western Washington Phase II Municipal Stormwater Permit and the Los Angeles Regional MS4 Permit (NPDES Permit No. CAS004004).

The outcomes of this workgroup may inform modifications to the Permit in a subsequent term.

Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) sets forth the hydraulic sizing design criteria that the stormwater treatment systems installed for

¹⁵⁵ BASMAA, February 27, 2015. “White Paper” on Provision C.3 in MRP 2.0: Final Report.

¹⁵⁶ Attachment L of Board Order No. R2-2009-0074, adopted October 14, 2009, and revised November 27, 2011.

Regulated Projects must meet. These criteria ensure that stormwater treatment systems will be designed to treat the optimum amount of relatively smaller-sized runoff-generating storms each year. That is, the treatment systems will be sized to treat the majority of rainfall events generating polluted runoff but will not have to be sized to treat the few very large annual storms as well. For many projects, such large treatment systems become infeasible to incorporate into the projects.

- **Provision C.3.d.iii.** defines infiltration devices and establishes limits on the use of stormwater treatment systems that function primarily as infiltration devices. The intent of the Provision is to ensure that the use of infiltration devices, where feasible and safe from the standpoint of structural integrity, must also not cause or contribute to the degradation of groundwater quality at the project sites.
- **Provision C.3.d.iv** is optional and allows the Permittees to collectively submit a proposal which evaluates the benefit of runoff reduction associated with trees and treatment control sizing of tree-based stormwater treatment in combination with structural soils and suspended pavement systems (or other methods which provide tree rooting volume), which will be considered for incorporation into a subsequent permit. This proposal is intended to learn from the findings of the ongoing Healthy Watersheds, Resilient Baylands project,¹⁵⁷ a San Francisco Estuary Partnership-led U.S. EPA Water Quality Improvement Fund (WQIF) project that is investigating similar criteria, and which has a technical action committee (TAC) that Water Board staff and Permittee representatives are participating in, to support the Permittees' submittal, and to ensure it has regional application. The purpose of this subprovision is to characterize the stormwater treatment and hydrologic benefit that new tree-based treatment systems provide when designed and maintained to a defined standard, not to credit existing trees that provide little water quality and hydrologic benefit because of the capacity and manner of treatment provided.

This subprovision clarifies the status of the Permittees' collectively-submitted 2011 Feasibility/Infeasibility Criteria Report, submitted pursuant to Provision C.3.i.(2)(b)(iv) of MRP 1 (Order No. R2-2009-0074), in which the Permittees proposed to grant Interceptor Tree Credits for Regulated Projects. The credits would have allowed Regulated Projects to reduce the calculated amount of impervious surface that has to be treated by LID, thus reducing treatment control sizing. Interceptor Tree Credits are not allowed during the current Permit term because the 2011 Feasibility/Infeasibility Criteria Report did not sufficiently justify them, because they have not yet been sufficiently studied, and because the Water Board has not approved their use. In addition, this subprovision allows the Permittees to submit a report on this issue as described above that could be incorporated into a subsequent permit.

¹⁵⁷ <https://www.sfei.org/projects/healthy-watersheds-resilient-baylands>

Provision C.3.e (Alternative or In-Lieu Compliance with Provision C.3.b.) recognizes that not all Regulated Projects may be able to install LID treatment systems onsite because of site conditions, such as existing underground utilities, right-of-way constraints, and limited space.

- **Provision C.3.e.i.** This Provision allows any Regulated Project to provide LID treatment for up to 100% of the required Provision C.3.d. stormwater runoff at an offsite location or pay equivalent in-lieu fees to provide LID treatment at a Regional Project, as long as the offsite or Regional Project is in the same watershed as the Regulated Project and constructed within three years of the end of construction of the Regulated Project. The three years of additional time are allowed because more time may be required to complete construction of offsite and Regional projects because of administrative, legal, and/or construction delays. The Water Board acknowledges, in some instances, an even longer time may be required to complete construction of Regional Projects because they may involve a variety of public agencies and stakeholder groups and a longer planning and construction phase. Therefore, the timeline for completion of a Regional Project may be extended up to 5 years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

Provision C.3.e.i language noting that Offsite Projects or Regional Projects must comply with Provision C.3.g “as appropriate” means that those projects (either Provision C.3.e.i.(1) or Provision C.3.e.i.(2)) must comply with Provision C.3.g if the original site seeking alternative compliance would otherwise be required to comply with Provision C.3.g.

To increase the flexibility available to Permittees, Provision C.3.e.i.(1) alternative compliance projects may provide 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area at Offsite Projects in the same watershed. Likewise, Provision C.3.e.i.(2) alternative compliance projects may provide 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area at Offsite Projects or Regional Projects through payment to an in-lieu fee program. However, Provision C.3.e.i.(1) and Provision C.3.e.i.(2) qualify that by requiring Permittees to include as much LID onsite as possible, to the MEP.

During the Permit term, the Permittees may submit new information for an alternative compliance program for exchanges of impervious surface treatment credits at the regional, county, and/or municipal level, resulting in offsite treatment or payment for equivalent offsite compliance for 100 percent of the required Provision C.3.c-d stormwater runoff (and Provision C.3.g, as appropriate).

Any such program should include at least the following: a clear organizational framework; demonstration of the treatment of an equivalent quantity of both stormwater runoff and pollutant loading (e.g., through the equivalent or net increase in impervious surface treated, and the equivalent or net reduction in flow and/or pollutant load, but not necessarily in the same watershed) and the achievement of net environmental benefit; an accounting and reporting system; a process for collection and timely use of funds; compliance with Provisions C.3.c-d and C.3.f-h; program oversight by an entity or entities; and expectations for timing and location. If or when such a program proposal is submitted, the Water Board will consider the new information and may consider amending the Permit to include a third option in Provision C.3.e.i that formally recognizes and allows the program specified in the proposal. This is in part a response to the City of San Pablo-led U.S. EPA Water Quality Improvement Fund (WQIF)-funded Regional Compliance for a Sustainable Bay project, which is investigating such a program that would facilitate alternative compliance exchanges between Permittees within Contra Costa County, but may be of interest in other counties and regionally.

As Permittees implement Provision C.3.e.i – which increases the flexibility available to Permittees when planning LID required by Regulated Projects – over the course of this Permit term, they will further incorporate their implementation of it into their municipal administrative and planning processes. Over the course of the Permit term, as Permittees become more accustomed to using Provision C.3.e.i, the Permittees will not be as reliant on Provision C.3.e.ii during their planning processes. Therefore, the Water Board will consider removing Provision C.3.e.ii in the subsequent Permit term, whose utility will be replaced by the Permittees' increased implementation of Provision C.3.e.i.

- **Provision C.3.e.ii. (Special Projects)** When considered at the watershed scale, certain types of smart growth and high density, and transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and auto-related pollutant impacts, to the extent they replace or reduce development projects that do not have those characteristics. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these types of Special Projects.

This Provision includes specific criteria for determining which types of Regulated Projects may be considered Special Projects and establishes different categories of Special Projects based on size, land use type, and density. Except for Category A, which represents the smallest Special Projects, Category B and C also use location, density, and parking criteria to establish a tiered approach for determining the total LID Treatment Reduction Credit available for any given Special Project.

Category C additionally includes affordable housing criteria for determining the total LID Treatment Reduction Credit available for Category C Special Projects. Affordable housing criteria are included in Category C, for two primary reasons.

First, affordable housing projects typically have high DUs/acre (as further incentivized by the Density Credits) and are typically located near public transportation (as further incentivized by the Location Credits), and thus they likely produce less automobile traffic (i.e., less pollutant loading to the MS4) compared to other development and redevelopment projects that do not have those characteristics. Second, affordable housing credited by this Provision will help reduce unsheltered homelessness, which will reduce pollutant discharges (e.g., of trash and sewage) from homeless encampments and other sources (e.g., RVs) into MS4s.¹⁵⁸ The Water Board recognizes that whether to allow for affordable housing is entirely within the Permittee's land use and zoning authority and discretion. Since such development can reduce pollutants from MS4 systems, the Affordable Housing Credits are provided in the Permit. It will benefit the unhoused population, as follows: The affordable housing criteria are structured in such a way that significant portions of the allowable rent/mortgage rates are capped for Extremely Low income households (0-30% of AMI), Very Low income households (31-50% of AMI), and Low income households (51-80% of AMI), rather than allowing all affordable housing units to qualify even if they only are affordable for Moderate income households (81-120% of AMI) which limit affordability to a significant portion of the population. The link to water quality improvement is expected to decline as rent/mortgage rates increase, as rent/mortgage rates as high as the Moderate level are likely to reduce unsheltered homelessness and its associated impacts at a much lower rate.

The other Category C credits (location, density, and parking criteria) are maintained from the Previous Permit, but reduced so that Affordable Housing Credits are the dominant credit for Category C projects while still recognizing the benefits provided by location, density, and parking criteria, and so that the total possible credit available for Category C Special Projects remains 100 percent. Category C of the Previous Permit primarily credited transit-oriented development (via Location Credits) and resulted in the treatment of approximately 324 acres of impervious surface by non-LID measures region-wide, most of which is attributable to projects for which the Permittees' reporting did not clearly demonstrate that it would have been infeasible to incorporate onsite LID or contribute to offsite LID, as allowed by Provision C.3.e.i. Therefore, Category C has been revised to solely target affordable housing development and redevelopment projects, as Provision C.3.e.i in this Permit already provides sufficient flexibility for other non-affordable housing development and redevelopments that would have qualified as Category C Special Projects in the Previous Permit.

¹⁵⁸ Batko, Oneto, and Shroyer, Dec. 2020. Unsheltered Homelessness: Trends, Characteristics, and Homeless Histories. Urban Institute, pp. 12-13.

Area Household Median Income (AMI) uses the most current Official State Income Limits (adjusted for household size), which are defined on the California Department of Housing and Community Development's website.^{159,160}

The definitions included in Category C for affordable housing are adapted from the Metropolitan Transportation Commission (MTC),¹⁶¹ the Association of Bay Area Governments (ABAG),¹⁶² the East Bay Housing Organizations (EBHO),¹⁶³ and the Federal Department of Housing and Urban Development (HUD).¹⁶⁴ For example, HUD defines Affordable Housing as housing for which rent or mortgage costs (including utilities) are no greater than 30 percent of total household income,^{165,166} for metropolitan areas, HUD defines Moderate household incomes as 81-120 percent of area median household income (AMI), Low household incomes as 51-80 percent of AMI, Very Low household incomes as 31-50 percent of AMI, and Extremely Low household incomes as 0-30 percent of AMI.^{167,168,169,170} Furthermore, Affordable Housing is defined by the Metropolitan Transportation Commission (MTC) as housing with deed restrictions running at least 55 years.^{171,172}

To be considered a Category C Special Project, the Regulated Project must be primarily a residential development project, achieve at least a gross density of 40 DU/acre, and the project's DUs must comply with the criteria outlined in Provision C.3.e.ii.(5)(c), which are: for 70 percent Affordable Housing Credit, 100 percent of the DUs within a Category C Special Project must have rent/mortgage rates (including utilities) no greater than 30 percent of the Moderate household income level (≤ 120 percent of AMI), 75 percent of the DUs must have rent/mortgage rates

¹⁵⁹ <https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml>

¹⁶⁰ As of December 31, 2021, they are: <https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf>

¹⁶¹ <https://mtc.ca.gov/whats-happening/news/mtc-offers-cities-counties-big-carrot-spur-affordable-housing>

¹⁶² https://abag.ca.gov/sites/default/files/rhna_methodology_technical_documentation.pdf

¹⁶³ <http://ebho.org/resources/what-is-affordable-housing/>

¹⁶⁴ https://www.hud.gov/topics/rental_assistance

¹⁶⁵ <https://archives.hud.gov/local/nv/goodstories/2006-04-06glos.cfm#:~:text=Affordable%20Housing%3A%20Affordable%20housing%20is,Reference%3A%20www.hud.gov>

¹⁶⁶ https://www.hud.gov/program_offices/administration/hudclips/acts/nah-ac

¹⁶⁷ <https://www.ffiec.gov/>

¹⁶⁸ <https://www.spur.org/news/2018-06-21/what-we-talk-about-when-we-talk-about-affordable-housing-primer>

¹⁶⁹ <https://www.planbayarea.org/2050-plan/plan-bay-area-2050-blueprint/plan-bay-area-2050-final-blueprint-documents>

¹⁷⁰ https://abag.ca.gov/sites/default/files/rhna_methodology_technical_documentation.pdf

¹⁷¹ <https://mtc.ca.gov/whats-happening/news/mtc-offers-cities-counties-big-carrot-spur-affordable-housing>

¹⁷² <https://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/focused-growth/affordable-housing/housing>

(including utilities) no greater than 30 percent of the Low household income level (≤ 80 percent of AMI), 50 percent of the DUs must have rent/mortgage rates (including utilities) no greater than 30 percent of the Very Low household income level (≤ 50 percent of AMI), and 25 percent of the DUs must have rent/mortgage rates (including utilities) no greater than 30 percent of the Extremely Low household income level (≤ 30 percent of AMI). Likewise, for 50 percent Affordable Housing Credit, 75 percent of the affordable housing DUs must have rent/mortgage rates (including utilities) no greater than 30 percent of the Moderate household income level (≤ 120 percent of AMI), 50 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Low household income level (≤ 80 percent of AMI), 25 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Very Low household income level (≤ 50 percent of AMI), and 15 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Extremely Low household income level (≤ 30 percent of AMI). These criteria, when implemented for Category C Special Projects, will reduce pollutant discharges from unhoused peoples into MS4s when they are housed by the newly-provided affordable housing. Finally, for 25 percent Affordable Housing Credit, 50 percent of the affordable housing DUs must have rent/mortgage rates (including utilities) no greater than 30 percent of the Moderate household income level (≤ 120 percent of AMI), 25 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Low household income level (≤ 80 percent of AMI), 15 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Very Low household income level (≤ 50 percent of AMI), and 5 percent must have rent/mortgage rates (including utilities) no greater than 30 percent of the Extremely Low household income level (≤ 30 percent of AMI).

Density Credits for Category C may only use DU/acre, whereas in MRP 2 they could also use FAR. This is because Category C may only be used by primarily residential projects rather than also by nonresidential and mixed development projects.

In MRP 1 and MRP 2, applicable Category C Special Projects were required to first qualify for Location Credits before qualifying for any Density Credits or Minimized Surface Parking Credits. In the current Permit Term, applicable projects must first qualify for Affordable Housing Credits before qualifying for any Location Credits, Density Credits, or Minimized Parking Credits. This is because the primary credit by which Category C Special Projects are allowed to qualify is the Affordable Housing Credit – if a project does not meet any of the criteria required to achieve one of the Affordable Housing Credits, it does not qualify as a Category C Special Project.

The gross density required for 5 percent Density Credit for Category C Special Projects has been reduced from 45 DU/ac to 40 DU/ac, to match the required minimum density included for Category C Affordable Housing Projects.

Definitions of Gross Density and Floor Area Ratio are included in Provision C.3.b.ii to facilitate consistent implementation of this Provision by all Permittees. Gross

Density is defined as the total number of residential units divided by the acreage of the entire site area, including land occupied by public rights-of-way, recreational, civic, commercial and other non-residential uses. Floor Area Ratio (FAR) is defined as the ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area. Gross Density and FAR have been purposely defined to include public rights-of-way, recreational, civic, commercial, and other non-residential uses so as to raise the bar for Regulated Projects to qualify for the LID Reduction Credits allowed in Provision C.3.e.ii. That is, these more conservative Gross Density and FAR values may result in some Regulated Projects qualifying for less LID Reduction Credits or not qualifying at all.

The reporting data for Special Projects under the Previous Permit showed that “lack of space to provide full LID stormwater treatment” is among the most frequent reason invoked for why 100 percent LID treatment onsite is infeasible. Therefore, it is appropriate that the space reserved for public rights-of-way, recreation, civic, commercial, and other non-residential uses are included in the calculations for gross density and FAR, especially since many of these areas may be used for installation of LID treatment measures.

Density LID Treatment Reduction Credits are allowed for mixed use development projects, which consist of a mix of residential and commercial land uses, based on density measured by either DU/acre or FAR for Category B Special Projects and by DU/acre for Category C Special Projects. A prior permit (R2-2009-0074) did not accommodate this variability and penalized dense mixed-use projects that are mostly residential by restricting density LID Treatment Reduction Credits to only floor area ratio criteria.

The total available LID Treatment Reduction Credit may be used to reduce the amount of stormwater runoff that must be treated with LID stormwater treatment systems. The remaining amount of stormwater runoff must be treated with one or a combination of the following two specific non-LID treatment systems:

- (1) Tree-box-type high flowrate biofilters
- (2) Vault-based high flowrate media filters

An additional reporting requirement has been added to Provision C.3.e.v.(3) and to Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects, Total Impervious Surface Created/Replaced: The total impervious surface in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1). The purpose of this additional reporting requirement is to better characterize the extent and lost opportunity (regarding no or reduced LID treatment) of Special Projects.

To reduce the burden of reporting, the semi-annual reporting of Special Projects that are being considered by Permittees prior to the Permittees granting final planning approval has been reduced to annual, within the Annual Report. Although the frequency of reporting has been reduced, the current reporting requirements for this Provision are not diminished because the data is necessary for Water Board staff to validate the Permittees' analysis of the number and size of potential Special Projects that may be approved during this permit term, and to ensure Permittees are taking all reasonable steps to ensure that the Special Projects Provision is only used when they certify that neither onsite nor offsite LID are feasible. The Water Board intends to use the data collected in the reporting requirements to revise the Special Projects criteria as appropriate for the next permit term.

The narrative summaries included in Permittees' Annual Reports generally have not properly justified the need for the Category C Special Projects Provision as it existed in MRP 2, because those narrative summaries have not sufficiently demonstrated the infeasibility of onsite or offsite LID. This further supports the change that has been made to Category C.

Provision C.3.e.ii Special Projects is temporarily retained in this Permit term, and will be considered for removal in subsequent permit terms. This is because Permittees will have had three Permit terms (Order Nos. R2-2009-0074, R2-2015-0049, and R2-2022-0018) to develop the alternative compliance programs allowed by Provision C.3.e.i. Provision C.3.e.ii Special Projects is intended to serve as an interim measure while Permittees further develop their Provision C.3.e.i alternative compliance programs, because Provision C.3.e.i is capable of providing the flexibility needed to accommodate the technical infeasibility of onsite LID for Regulated Projects, without foregoing the water quality and hydrologic benefits provided by LID. The non-LID treatment measures allowed by Provision C.3.e.ii Special Projects do not provide those benefits to the same degree, although that reduction may be somewhat offset by the water quality benefits associated with avoidance of or potential reductions in unsheltered homelessness.

Provision C.3.e.iii. Implementation Level directs the Permittees to implement Provision C.3.e.ii beginning July 1, 2023. Prior to July 1, 2023, Provision C.3.e.iii.(5) directs Permittees to implement Provision C.3.e.ii in Attachment I, which are requirements from the Previous Order, with dates adjusted for consistency. The rationale for these requirements is set forth in the Previous Permit's Fact Sheet and is incorporated herein. The purpose of the delayed implementation date for Provision C.3.e.ii is to allow Permittees the time needed to arrange all relevant planning authorities and municipal processes to implement changes to Provision C.3.e.ii relative to the Previous Permit.

Provision C.3.f. (Alternative Certification of Stormwater Treatment Systems) allows Permittees to have a third-party review and certify a Regulated Project's compliance with the hydraulic design criteria in Provision C.3.d. Some municipalities do not have the

staffing resources to perform these technical reviews. The third-party review option addresses this staffing issue. This Provision requires Permittees to make a reasonable effort to ensure that the third-party reviewer has no conflict of interest with regard to the Regulated Project being reviewed.

Provision C.3.g. (Hydromodification Management) requires that certain new development projects manage increases in stormwater runoff flow and volume so that post-project runoff shall not exceed estimated pre-project runoff rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Based on Hydrograph Modification Management Plans prepared by the Permittees, the Water Board adopted hydromodification management (HM) requirements for Alameda Permittees (March 2007), Contra Costa Permittees (July 2006), Fairfield-Suisun Permittees (March 2007), Santa Clara Permittees (July 2005), and San Mateo Permittees (March 2007). Those HM requirements are stated in Provision C.3.g., and Attachment C includes maps prepared by the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees showing areas where HM requirements apply.

The Alameda, Santa Clara and San Mateo Permittees have adapted the Western Washington Hydrology Model¹⁷³ for modeling runoff from development project sites, sizing flow duration control structures, and determining overall compliance of such structures and other HM control structures (HM controls) in controlling runoff from the project sites to manage hydromodification impacts as described in the Permit. The adapted model is called the Bay Area Hydrology Model (BAHM).¹⁷⁴ All Permittees may use the BAHM if its inputs reflect actual conditions at the project site and surrounding area, including receiving water conditions. As Permittees gain experience in designing and operating HM controls, the Programs may make adjustments in the BAHM to improve its function in controlling excess runoff and managing hydromodification impacts. Notification of all such changes shall be given to the Water Board and the public through such mechanism as an electronic email list.

The Contra Costa Permittees have developed sizing charts for the design of flow duration control devices. MRP 1 allowed the Contra Costa Permittees to conduct a monitoring program to verify the performance of these devices and to identify whether streams to which Contra Costa Permittees discharge may have a different susceptibility to HM impacts, thus justifying a different threshold for control of flows resulting in those impacts. The Contra Costa Permittees submitted an IMP Monitoring Report,¹⁷⁵ which

¹⁷³ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals/Western-Washington-Hydrology-Model>

¹⁷⁴ See www.bayareahydrologymodel.org, Resources.

¹⁷⁵ Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report: IMP Model Calibration and Validation Project.

found that Contra Costa HM measures generally, but not entirely, met MRP 1's HM requirements for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. The Contra Costa Permittees did not submit information showing that Contra Costa creeks had a different susceptibility to erosion. That is, they did not submit a justification for using erosion thresholds different than those accepted for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. Under MRP 1, the Water Board had accepted a higher threshold for control of HM effects (i.e., controlling the range of flows beginning at 20 percent of the 2-year pre-project peak flow, as opposed to 10 percent of the 2-year pre-project peak flow). Because this additional information was not submitted, and Contra Costa streams are generally similar to other Bay Area streams, MRP 2 extended the 10 percent standard to Contra Costa, and included requirements for Contra Costa to complete modifications to its HM approach to ensure that projects implement that consistent approach within a specified time.

Pursuant to Provision C.3.g.iii of MRP 2, the Contra Costa Permittees submitted a HM Technical Report¹⁷⁶ with the 2017 Annual Report, which suggested changes to sizing factors for an array of HM controls used by Contra Costa Permittees to comply with the HM Standard in Provision C.3.g.ii. Water Board staff's review of the 2017 HM Technical Report¹⁷⁷ and subsequent discussion with the Contra Costa Permittees culminated in modifications to Provision C.3.g.iii of this Permit, which requires the Contra Costa Permittees to revise their 2017 HM Technical Report so that HM Projects comply with the HM Standard of Provision C.3.g.iii, by excluding data that are not representative and assumptions that are not supported, and by producing a complete suite of sizing factors that are protective of all likely site and watersheds characteristics within Contra Costa County, for all types of HM controls that may be used in the County and for sites with Hydrologic Soil Group A, B, C, and D soils.

The CCCWP Permittees are required to use a base case sizing factor of 6.5 percent for the complete suite of sizing factors, which is a conservative sizing factor based on sites with project-scale built-out imperviousness in the upper watershed for the Lower Control Threshold of 0.1Q2, for soil percolation rates of 0.024 inches per hour, as presented in Table 5-7 on page 58 of the 2017 HM Technical Report. In developing the complete suite of sizing factors, the CCCWP Permittees are required to justify deviations from the base case as conditions of exception that could allow alternative sizing while still being protective (adhering to the HM Standard of maintaining $EP \leq 1$) – for different soil types and different applicable geographic characteristics.

This requirement in Provision C.3.g.iii is attached to the reporting requirement in Provision C.3.g.vi.(2).

¹⁷⁶ Contra Costa Clean Water Program Hydromodification Technical Report. September 29, 2017.

¹⁷⁷ Lichten, March 19, 2021. Response to CCCWP's Hydromodification Management Memo of November 4, 2020, and next steps. SF Bay Water Board.

Within Provision C.3.g.vi.(2)(b): (A) "The additional mitigation measures shall not include: reliance on... the presence of existing or future HM and LID controls located elsewhere within the catchment," is distinct from: (B) "The Technical Report may additionally propose alternative or supplemental methods of compliance with Provision C.3.g.iii. HM Standard, including any combination of: ...additional new HM controls located offsite within the same catchment as the receiving stream..."

A) refers to hydromodification management controls that are outside the control of a project proponent and may be speculative or below the point of discharge to a receiving water body (e.g., a creek).

(B) refers to controls constructed concurrently and in combination with other controls specified in C.3.g.vi.(2)(b), as an alternative or supplemental method of compliance with the C.3.g.ii. HM Standard: "undersized onsite HM controls... and in-stream controls... which when implemented together achieve the C.3.g.iii HM Standard."

Provision C.3.g.v. of MRP 1 required the City of Vallejo to complete a hydrograph modification management plan (HMP) by July 1, 2013, in lieu of complying with that order's Provision C.3.g.i-iv. The City submitted its Final HMP on April 24, 2013,¹⁷⁸ and the HMP was subsequently accepted by Board staff. The Final HMP incorporates the same requirements as for the Alameda, Santa Clara, and San Mateo Permittees. The Permit requires the City to comply with those requirements.

The Fairfield-Suisun Permittees are required to comply with the HM criteria established in this Permit. However, they have a threshold for control of erosive flows that is greater than the other Permittees: 20 percent of the 2-year peak flow. This criterion, which is greater than the criterion allowed for other Bay Area Stormwater Countywide Programs, is based on data collected from Laurel and Ledgewood Creeks and technical analyses of these site-specific data.

The Water Board recognizes that the collective knowledge of management of erosive flows and durations from new and redevelopment is evolving, and that the topics listed below are appropriate topics for further study. Such a study may be initiated by Water Board staff, or the Executive Officer may request that all Bay Region municipal stormwater Permittees jointly conduct investigations as appropriate. Any future proposed changes to the Permittees' HM provisions may reflect improved understanding of these issues:

- (1) Potential incremental costs, and benefits to waterways, from controlling a range of flows up to the 35- or 50-year peak flow, versus controlling up to the 10-year peak flow, as required by this Permit;
- (2) The allowable low-flow (also called Q_{cp} and currently specified as 10–20 percent of the pre-project 2-year runoff from the site) from HM controls;

¹⁷⁸ City of Vallejo (Geosyntec), April 2013. Final Hydromodification Management Plan (HMP).

- (3) The effectiveness of self-retaining areas for management of post-project flows and durations; and/or
 - (4) The appropriate basis for determining cost-based impracticability of treating stormwater runoff and controlling excess runoff flows and durations.
- **Provision C.3.g.i.** defines the subset of Regulated Projects that must install hydromodification controls (HM controls). This subset, called HM Projects, are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded by the conditions expressed in C.3.g.i.(1)-(3). Those conditions identify areas where the potential for single-project and/or cumulative development hydromodification impacts to creeks is minimal, and thus HM controls are not required. Such areas include creeks that are concrete-lined or significantly hardened (e.g., with concrete) from point of discharge and continuously downstream to their outfall into San Francisco Bay; underground storm drains discharging to the Bay; and construction of infill projects in highly developed watersheds.¹⁷⁹ The Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees have developed maps showing where HM controls are required (Attachment C).

This Provision requires Permittees that have not previously submitted an HM Applicability Map or equivalent information to prepare and submit that information, acceptable to the Executive Officer, consistent with the requirements of Provision C.3.g. This targets the Contra Costa Permittees, who submitted a HM Applicability Map^{180,181} with the 2017 Annual Report, which was not satisfactory because it included areas that were not yet resolved (whether or not projects in those areas would be HM Projects), and it claimed certain channels are not hardened, which are in fact hardened. This requirement is attached to the reporting requirement in Provision C.3.g.vi.(1), which requires submittal of new or revised HM Applicability Maps by no later than with the 2023 Annual Report.

- **Provision C.3.g.ii.** establishes the standard HM controls that all HM Projects must meet. The HM Standard is based largely on the standards proposed by Permittees in their Hydrograph Modification Management Plans. The method for calculating post-project runoff in regards to HM controls is standard practice in Washington State and is equally applicable in California.
- **Provision C.3.g.iii.** provides a procedure for the Permittees to propose an additional method for demonstrating compliance with HM requirements. This method would

¹⁷⁹ Within the context of Provision C.3.g., “highly developed watersheds” refers to catchments or sub-catchments that are 70 percent impervious or more.

¹⁸⁰ Attachment 3.1 to 2017 CCCWP Annual Report: Hydromodification Applicability Mapping Methodology Technical Memorandum. September 11, 2017.

¹⁸¹ Attachment 3.2 to 2017 CCCWP Annual Report: Hydromodification Applicability Map. September 28, 2017.

directly simulate erosion potential, and would be required to ensure that projects implementing HM controls with this method, if accepted by the Executive Officer, meet the Permit's HM criteria. This provision requires submittal of appropriate analyses (with the 2023 Annual Report, pursuant to the reporting requirement in Provision C.3.g.vi.(2)) demonstrating that the method will substantively comply with HM requirements; it may not be implemented on projects until accepted by the Executive Officer.

- **Provision C.3.g.iv.** identifies and defines three methods of hydromodification management.
- **Provision C.3.g.v.** establishes the timeframes for meeting the HM Standard defined in Provision C.3.g.ii.
- **Provision C.3.g.vi.** describes the information required to be collected and/or submitted in the Permittees' Annual Reports regarding HM Projects. This Provision also describes specific required information for Contra Costa Permittees to submit with the 2023 Annual Report, which follows from the requirements in Provision C.3.g.i (HM Applicability Map) and in Provision C.3.g.iii (revised HM Technical Report).

Regarding the information to be submitted by the Contra Costa Permittees, Provision C.3.g.vi.(2)(b) includes two distinct criteria:

- (A) "The additional mitigation measures shall not include: reliance on... the presence of existing or future HM and LID controls located elsewhere within the catchment which do or will satisfy other NPDES or CWA requirements," is distinct from:
- (B) "The Technical Report may additionally propose alternative or supplemental methods of compliance with Provision C.3.g.iii. HM Standard, including any combination of: ...additional new HM controls located offsite within the same catchment as the receiving stream..."

That's because (A) refers to existing and potential/future controls that have been (or that may or will be) implemented to satisfy other NPDES or CWA (e.g., mitigation required for 401 certification) requirements. For example, new bioretention cells that will be constructed for an anticipated or upcoming Regulated Project, or existing bioretention cells that were constructed several years ago for a Regulated Project, or potential bioretention cells that would be constructed if a potential Regulated Project becomes an actual Regulated Project at some point in the future.

On the other hand, (B) refers to controls constructed concurrently and in combination with other controls specified in Provision C.3.g.vi.(2)(b), as an alternative or supplemental method of compliance with the Provision C.3.g.ii.

HM Standard: "undersized onsite HM controls... and in-stream controls... which when implemented together achieve the Provision C.3.g.iii HM Standard." This *does not* include taking credit for controls that are required for other NPDES or other CWA requirements; it's referring to new controls that are implemented specifically to mitigate hydromodification impacts for a given HM Project, that are not double-counted.

Provision C.3.h. (Operation and Maintenance of Stormwater Treatment Systems) establishes permitting requirements to ensure that proper maintenance for the life of the Regulated Project is provided for all pervious pavement systems of 3,000 square feet or more; onsite, joint, and offsite stormwater treatment systems; and HM controls installed.

This Provision adds a requirement for Permittees to include pervious pavement systems of 3,000 square feet or more in their Operation and Maintenance Agreements, database of Regulated Projects, and inspection checklists. Pervious pavement systems serve as site design measures that directly reduce the amount of impervious surface area and therefore, the size of the stormwater treatment system(s) required to comply with Provision C.3.d. Adequate routine maintenance of pervious pavement systems is essential because clogged systems become impervious and may result in untreated stormwater runoff or additional load on stormwater treatment systems that result in inadequately treated stormwater runoff. To lessen the burden of inspecting so many pervious pavement systems, only those of 3,000 square feet or more are required to be inspected and patios for private-use at single-family homes, townhomes, or condominiums are specifically excluded. In the case of large subdivisions where the total pervious pavement system area is equal to or greater than 3,000 square feet, but the pervious pavement installations are on individual driveways that are less than 3,000 square feet, inspection of a representative number of driveways will suffice.

- **Provision C.3.h.ii.(6).** MRP 1 required Permittees to inspect at least 20 percent of all stormwater treatment systems annually, at least 20 percent of all vault-based systems annually, and every treatment system at least once every 5 years. Permittees have indicated that each inspection of a Regulated Project routinely includes inspection of pervious pavement systems, stormwater treatment systems and HM controls installed at the Project. Therefore, this Provision requires the inspection frequency requirements such that the minimum number of inspections required annually is tied to a percentage of the total number of Regulated Projects, instead of the total number of individual treatment systems and HM controls. This lessens the tracking burden for the Permittees and better reflects the way actual inspections are conducted.

This Provision requires each Permittee to inspect all its Regulated Projects at least once every 5 years and inspect an average of 20 percent, but no less than 15 percent of the total number of Regulated Projects annually. This requirement serves to prevent failed or improperly maintained pervious pavement systems, stormwater treatment systems, or HM controls from going undetected until the 5th year. Neither

of these inspection frequency requirements interferes with the Permittees' current ability to prioritize their inspections based on factors such as types of maintenance agreements, owner or contractor-maintained systems, maintenance history, past compliance problems at certain Projects, etc.

- **Provision C.3.h.ii.(6)(d)** This Provision allows Permittees to accept third party inspection reports for vault-based stormwater treatment systems in lieu of conducting Permittee inspections, but only if the third party inspections are conducted at least annually, which is the normal frequency for maintenance of these systems. Each third party inspection must be included in the database or tabular format required in Provision C.3.h.ii.(4) and (5) and clearly identified as a third party inspection. Each third party inspection report must document the third party inspection company, date of inspection, condition of the treatment unit(s) at the time of inspection, maintenance activities performed, and appearance of the inside of the vault units (with photos) before and after maintenance.
- **Provision C.3.h.ii.(7)** As the number of Regulated Projects grows, the Permittees' O&M inspection programs must grow as well. Therefore, this Provision requires each Permittee to develop and implement an Enforcement Response Plan (ERP) for O&M inspections. The ERP serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. This Provision establishes minimum requirements for the ERPs. One of these requirements is that corrective actions must be implemented within 30 days after a problem is identified by an inspector. Thirty days is more than adequate time, considering that many of the problems identified in past O&M inspection reports have been lack of maintenance service or build-up of sediment or debris. The correction of such deficiencies should not take more than 30 days. This Provision also allows for greater than 30 days to complete permanent corrective actions, such as installing additional curb cuts and making grading or vegetation improvements.
- **Provision C.3.h.iv.** This Provision requires Permittees to ensure that pervious pavement systems that total 3,000 square feet or more, stormwater treatment systems, and hydromodification controls are appropriately operated and maintained for the life of those systems and controls, which maintenance is necessary to ensure the systems and controls are operating effectively and protecting water quality consistent with their designs. It recognizes situations where maintenance may be delayed due to the need to obtain certain federal or state permits (e.g., special status species take authorization from a state or federal agency), and sets expectations regarding how Permittees should proceed. Specifically, Permittees should ensure a system's or controls' responsible party is working in good faith to obtain those authorizations. It directs Permittees to abide by the expectations set in the Water Board's Resolution No. 94-102 for applicable systems, including the maintenance thereof.

- **Provision C.3.h.v.** As in MRP 1 and MRP 2, this Provision requires the Permittees to maintain a database or equivalent tabular format with detailed information on each O&M inspection and any necessary enforcement actions against Regulated Projects. To lessen the burden of reporting, this Provision only requires summary data on inspections conducted each fiscal year to be reported in the Annual Report, instead of detailed information on each O&M inspection. However, upon request by the Executive Officer, detailed information from the database or tabular format must be submitted.

Provision C.3.i. (Required Site Design Measures for Small Projects and Detached Single-Family Homes Projects) contains requirements for detached single-family home projects that create and/or replace $\geq 2,500$ ft² to $<10,000$ ft² of impervious surface and small development and redevelopment projects that create and/or replace $\geq 2,500$ ft² to $<5,000$ ft² of impervious surface (collectively over the entire project). A detached single-family home project is defined as the building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development. Projects with new or replaced impervious surface of this size transport storm water pollutants that can be controlled through basic site design measures.

This Provision requires these projects to select and implement one or more stormwater site design measures from a list of six. These site design measures are basic methods to reduce the amount and flowrate of stormwater runoff from projects and provide some pollutant removal treatment of the runoff that does leave the projects. Under this Provision, only projects that already require approvals and/or permits under the Permittees' current planning, building, or other comparable authority are regulated. Hence this Provision does not require Permittees to regulate small development and single-family home projects that would not otherwise be regulated under the Permittees' current ordinances or authorities. Water Board staff recognizes that the stormwater runoff pollutant and volume contribution from each one of these projects may be small relative to other types of development and redevelopment projects; however, the cumulative impacts are likely to be significant. This Provision serves to address some of these cumulative impacts in a simple way that will not be too administratively burdensome on the Permittees.

Provision C.3.i.ii. Implementation Level directs the Permittees to implement Provision C.3.i beginning July 1, 2023.

Provision C.3.i.ii.(2) is as follows: Prior to July 1, 2023, it directs Permittees to implement Provision C.3.i in Attachment I, which are requirements from the Previous Permit. The rationale for these requirements is set forth in the Previous Permit's Fact Sheet and is incorporated herein. The purpose of this delayed implementation date for Provision C.3.i is to allow Permittees the time needed to arrange all relevant planning authorities and municipal processes, train their staff, etc., regarding changes made to Provision C.3.i relative to the Previous Permit.

Provision C.3.j. (Green Infrastructure Planning and Implementation) MRP 2 required Permittees to complete and begin implementation of a Green Infrastructure Plan (GI Plan) for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements. In particular, green infrastructure sited in the public right of way that collects stormwater from adjacent tributary parcels can be a more efficient use of public and private resources than treatment of individual parcels, and can also result in additional treatment compared to parcel-based treatment.¹⁸² As such, Permittees have used green infrastructure approaches when siting treatment systems for Regulated Projects, such as for Provision C.3.e.i Alternative Compliance projects.

Public Law 115-436 Water Infrastructure Improvement Act approved on January 14, 2019, established section 402(s) of the CWA authorizing integrated plans that address both municipal wastewater and stormwater management as a potential compliance path that may be incorporated into an NPDES permit. Integrated planning is designed to help municipalities identify efficiencies in implementing requirements that arise from distinct permitting programs, particularly how best to make capital investments (Integrated Municipal Stormwater and Wastewater Planning Approach Framework, U.S. EPA, June 5, 2012). Under this law, an integrated plan can be used to implement any requirements relating to a combined sewer overflow, sanitary sewer collection system, municipal stormwater discharge, municipal wastewater discharge, and a water quality-based effluent limitation to implement an applicable wasteload allocation in a total maximum daily load. The integrated planning approach does not relax or change regulatory permitting standards, but rather recognizes existing flexibilities in the CWA to sequence and schedule compliance projects that may be relevant to multiple permitting programs (33 U.S.C. § 1342(s)(5)). Notably, Congress recognized the value of green infrastructure in meeting CWA requirements in allowing green infrastructure in integrated plans (*Id.* at subd. (s)(3)(b)(ii)). While this Order is not an integrated plan under CWA section 402(s), it shares the same principle of promoting integrated

¹⁸² For example, see:

WEF, Dec. 2, 2015. *The Real Cost of Green Infrastructure*. WEF Stormwater Report. Web. July 24, 2021.

McGlynn, Dec. 2019. *Clock Ticking for Cities to Commit to Urban Greening*. Estuary News, the San Francisco Estuary Partnership.

CCAG, January 2021. *San Mateo Countywide Sustainable Streets Master Plan*.

Clary et al., 2020. *International Stormwater BMP Database: 2020 Summary Statistics*. The Water Research Foundation.

Sustainable Business Network, May 2021. *Green Stormwater Infrastructure (GSI): A Tool for Economic Recovery and Growth in Pennsylvania*.

Sustainable Business Network, 2021. *Excellence in GSI Awards*, Philadelphia, PA.

Stutz, Bruce, March 29, 2018. *With a Green Makeover, Philadelphia is Tackling Its Stormwater Problem*. Yale Environment 360.

planning in meeting various regulatory requirements, especially with regard to green infrastructure.

The GI Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For MRP 2, the development of the GI Plan was in lieu of expanding the definition of Regulated Projects prescribed in Provision C.3.b.ii to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. However, this Permit includes (and subsequent Permits may further include) different impervious surface thresholds or other criteria for Regulated Projects. The GI Plan also provides a mechanism to establish and implement alternative or in lieu compliance options for Regulated Projects.

Over the long term, the GI Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The GI Plan also identifies means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it includes means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it incorporates plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash and PCBs, mercury, and other pollutants. Permittees may comply with the requirements of this Provision through collaborative efforts.

MRP 2 specified minimum elements that each GI Plan must contain to ensure that each GI Plan is robust and appropriately identifies the means and methods that each Permittee will employ to implement green infrastructure over time. These minimum elements are not overly prescriptive, so as to allow Permittees flexibility in developing their GI Plans. They are repeated here, to guide the Permittees' ongoing updates and addenda to their Plans as prescribed by Provision C.3.j.ii.(1):

- (1) A mechanism to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis. Implementation of these projects is required to be projected over the same timeframes as specified

in Provisions C.11. and C.12. for assessing mercury and PCB load reductions because green infrastructure and projects are an acknowledged means of pollutant load reductions. Each Permittee has flexibility in choosing the mechanism as long as it includes criteria for prioritization and outputs that can be incorporated into its long-term planning and capital improvement processes.

- (2) Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the same timeframes as specified in Provisions C.11. and C.12. for assessing mercury and PCB load reductions. These self-determined targets represent the green infrastructure work that each Permittee has proactively identified will be completed beyond what would be completed in its community anyway.
- (3) A process for tracking and mapping completed projects, public and private, and making the information publicly available. Again, each Permittee has flexibility in what they use to comply with this Provision.
- (4) General guidelines and standard specifications for overall streetscape and project design and construction to ensure that projects have a unified, complete design that implements the range of functions associated with the projects. These guidelines and standard specifications, while crucial to a Green Infrastructure Plan, already exist in many reference documents for green infrastructure design and are readily available.
- (5) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. In recognition of space and drainage constraints that may occur for public green infrastructure road projects not subject to Provision C.3.b.ii (i.e., non-Regulated Projects), this Provision allows Permittees to collectively propose a single approach for how to proceed should project constraints preclude fully meeting the C.3.d. sizing requirements. The single approach can include different options to address specific issues, constraints, or scenarios.
- (6) A summary of the planning documents the Permittee has updated or otherwise modified as well as how the Permittee will ensure that green infrastructure requirements will be included in future plans. The purpose of this element is to show that each Permittee is considering green infrastructure in all aspects of its urban planning.
- (7) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.
- (8) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, state, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

In addition to the development of the GI Plans, MRP 2 required each Permittee to:

- (1) Prepare a framework or workplan that describes specific tasks and timeframes for developing its GI Plan. The framework or workplan was required to be approved by each Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This approval process provided assurance to the Water Board that Permittees are committed to the development and implementation of the GI Plan and green infrastructure.
- (2) Document in its 2017 Annual Report that the framework or workplan for development of its GI Plan was approved by June 30, 2017, as required by Provision C.3.j.i.(1) of MRP 2. This Provision also required each Permittee to submit its GI Plan and documentation of the legal mechanisms to implement the GI Plan with the 2019 Annual Report.
- (3) Prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation that have potential for green infrastructure measures.

The Permittees were required to submit the list with each Annual Report along with a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project under Provision C.3.b.ii. This Provision also required each Permittee to include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, the Permittee was required to submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

The purpose was to ensure that each Permittee is proactively developing green infrastructure projects and including green infrastructure elements into already planned infrastructure projects as much as possible, both while the GI Plan was being developed, and subsequent to its development.

This requirement is retained in the Permit, in Provision C.3.j.iii, No Missed Opportunities.

- (4) Individually or collectively, to track processes, assemble and submit information, and provide information, materials, and presentations as needed to assist relevant regional, state, and federal agencies to plan, design, and fund green infrastructure measures in local infrastructure projects, including public transportation projects.

- (5) Individually or collectively, to develop and implement regionally consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.

The GI Plans were completed during MRP 2; therefore, the focus of Provision C.3.j in the Permit shifts from planning to implementation. U.S. EPA supports the Permit's movement from planning to implementation of green infrastructure on a more regional basis.¹⁸³ Provision C.3.j.i. Task Description requires the Permittees to (continue to) implement their GI Plans, as may be updated and supplemented to comply with this Order.

Provision C.3.j.ii Implementation Level, prescribes programmatic requirements, numeric requirements, and design criteria that Permittees must comply with when implementing their GI Plans during the Current Permit Term.

Provision C.3.j.ii.(1) describes the Programmatic Implementation requirements requiring Permittees to update and supplement their GI Plans to ensure that municipal processes and ordinances allow and appropriately encourage implementation of green infrastructure, and incorporate lessons learned, by:

- (1) Revising the implementation mechanisms in the GI Plans to include consideration or reconsideration of cooperation with non-municipal entities such as schools on green infrastructure implementation, and otherwise updating implementation mechanisms as appropriate.

This is necessary because Permittees may need to update their implementation mechanisms as certain processes are refined or adapted to better support green infrastructure implementation. Cooperation with non-municipal entities like school districts is required to be considered or reconsidered because schools can offer excellent opportunities for green infrastructure implementation for a number of reasons, including their likely coverage under the California Small MS4 General Permit, which is expected to clarify the clean water role they can play going forward; their role in climate change adaptation planning efforts; their often substantial impervious surface coverage; and the ability of municipalities to

¹⁸³ U.S. EPA provides many resources at a national level that document the multiple benefits that green infrastructure can have on water quality and community well-being: <https://www.epa.gov/green-infrastructure/benefits-green-infrastructure>

regulate discharges from schools into their MS4s.¹⁸⁴ Often, schools have some of the most-available area for green infrastructure implementation, along with budget needs that can facilitate cooperation when municipalities or others contribute sources of funding. Because of the opportunities for implementation, funding, and shared need, GI Plans should be revised to include, in their prioritization approaches, green infrastructure projects that may be implemented in a joint or cooperative manner, including not only those coordinated with schools, but also those coordinated with Bay Area Rapid Transit (BART), Caltrans, and others as appropriate.

- (2) Following through with the development or updates of general plans, specific plans, urban forestry plans, climate change adaptation plans, complete streets plans and other planning documents with a green infrastructure nexus to include language which is more supportive of green infrastructure implementation, as identified by the Permittees in their GI Plans. Upon request by Water Board staff, Permittees are required to provide justifications for planning documents that they assert do not need to be updated to further support green infrastructure implementation.

This is necessary because not all Permittees sufficiently updated their planning documents as required in the Previous Permit term to demonstrate that they are considering green infrastructure in all aspects of urban planning. In many cases, it was unclear how the planning documents supported green infrastructure implementation. Water Board staff's complete review of the GI Plans, which provides guidance on this and other facets of Provision C.3.j.ii.(1), is detailed in an October 2020 memo.¹⁸⁵

GI Plans that identify overarching policy or planning documents are worthwhile for other Permittees to consider. For example, San Mateo County references the City/County Association of Governments of San Mateo County's (C/CAG's) Sustainable Streets Master Plan, which prioritizes locations to integrate green infrastructure into street rights of way and considers how those projects may contribute to climate change resilience. This opportunity to more legibly consider and coordinate the multiple benefits of green infrastructure could facilitate implementation over time.

Several GI Plans reference specific plans, neighborhood plans, street master plans, or similar documents, which can allow municipalities to focus their green infrastructure implementation in an intentional and targeted manner. Examples

¹⁸⁴ For example, L.A. Unified School District: Storm Water Management and Low Impact Development. <http://learninggreen.laschools.org/stormwater-management.html>. Accessed July 26, 2021. Sharon Danks, *A vision for green schoolyards across California*. Green Technology Magazine, Web. accessed July 26, 2021. <https://www.green-technology.org/magazineneeds/a-vision-for-green-schoolyards-across-california/>

¹⁸⁵ *Water Board Staff's Review of the 2019 Green Infrastructure Plans*. October 1, 2020.

include the City of El Cerrito's 2014 San Pablo Avenue Specific Plan, which, among other things, charges private development with impact fees to fund frontage improvements on San Pablo Avenue, and the City of Berkeley's 2019 Adeline Corridor Specific Plan, which has identified several promising green infrastructure opportunities. Master planning efforts like those framed in specific plans have long been tools for effective green infrastructure implementation. More than twenty years ago, Fremont's plan for the 840-acre Pacific Commons site enabled comprehensive district-scale stormwater planning and expectation setting in advance of development of parcels within the district. The Water Board supports the use of specific plans and related plans to facilitate green infrastructure implementation, and as part of a range of green infrastructure implementation tools that should be applied throughout Permittee jurisdictions.

The expectation of this Provision is that Permittees continue to update existing plans to include, as appropriate, and to incorporate into new plans, low impact development and green infrastructure expectations, including implementation. Similar to El Cerrito's and Berkeley's approaches, Permittees' updated and new specific plans and similar documents should incorporate green infrastructure requirements for the plan areas. For example, the City of Campbell's GI Plan noted several neighborhood and street master plans that could be updated to incorporate and coordinate green infrastructure expectations, and referenced development by this year of a schedule to complete those updates. That was similar to other municipality plans in western Santa Clara County, and is a reasonable model for addressing updates during the Permit term.

- (3) Developing funding and funding mechanisms identified in the GI Plans, such as by working with the relevant agencies to expand the scope of transportation grants to include allocation for green infrastructure; establishing green infrastructure-based or green infrastructure-incorporating stormwater fees, including work that sets the foundation for additional future stormwater fees; establishing or increasing application review fees, and evaluating other opportunities to leverage municipal approval of private development to fund green infrastructure implementation.

The most common existing funding sources identified in the GI Plans are State grants and internal revenues. Many GI Plans commit to incorporating consideration of green infrastructure into the Permittees' Capital Improvement Plans (CIP) so that green infrastructure funding may be tied to CIP projects where incorporation of green infrastructure has been identified as otherwise feasible. Given existing funding constraints, most Permittees are prioritizing maintenance of existing infrastructure over addressing pollutant discharges (from yet-untreated impervious surfaces) with clean water controls.

To overcome this challenge, the GI Plans describe widespread interest in establishing new long-term funding sources, such as alternative compliance

programs, Prop. 218- and SB 231-compliant stormwater utility fees, and permit fees. A few GI Plans describe existing stormwater utility fees enacted prior to Prop. 218, and others note how these fees are currently being pursued. Oakland's GI Plan includes a useful summary letter (App. F, Oakland 100RC Stormwater Program Financing Memo) that describes a range of available funding opportunities, in addition to citing BASMAA's 2018 Roadmap of Funding Solutions for Sustainable Streets.¹⁸⁶ Nearly every GI Plan that expressed hesitance in pursuing such fees now stresses 1) the risk associated with legal challenges, and 2) the need to wait for another Permittee to be the legal test subject for this approach.

Permittees such as the Cities of San Mateo and Redwood City are leading the way by more fully recognizing the extent of development project urban runoff impacts and requiring developers to fund green infrastructure that is either beyond the Permit's minimum requirements or based on a reinterpretation of the Permit's requirements as a condition of approval.

During the Permit term, Permittees with regulated projects should evaluate opportunities to pursue approaches similar to those being implemented by the Cities of San Mateo and Redwood City.

Funding approaches that the Water Board did not see broadly considered in the GI Plans include: impervious surface fees targeting all impervious surface, including single- and multi-family residential parcels, tied to the operation and maintenance of the storm drain system; and maintaining or increasing development application review and post-construction green infrastructure operation and maintenance inspection fees to a level sufficient to allow for a self-sustaining program. The Water Board welcomes opportunities to discuss and support Permittees' funding approaches.

There are some interesting countywide proposals unique to certain counties. For example, the GI Plans for Permittees within Contra Costa County include a discussion of legislative constraints to the use of Contra Costa Transportation Authority Sales Tax Revenue for green infrastructure implementation, and of pursuing a ruling from MTC on the Highway User Gas Tax Account. The GI Plans for Permittees within San Mateo County include a discussion of the planned Flood and Sea Level Rise Resiliency Agency, which would help fund regional green infrastructure projects. The Water Board looks forward to working with the Permittees to support these and any other new or similar countywide efforts. Most GI Plans also, appropriately, reference BASMAA's 2018 Roadmap of Funding Solutions for Sustainable Streets.¹⁸⁶

¹⁸⁶ https://basmaa.org/wp-content/uploads/2021/01/roadmap_funding_solutions_sustainable_streets_final.pdf

- (4) Reviewing countywide green infrastructure implementation guidance documents and adapting them as necessary to account for local considerations if this has not already been completed during the Previous Permit term, and otherwise reviewing and updating general guidelines and standard specifications as appropriate.

The primary goal of this requirement is to ensure that there are no barriers to green infrastructure implementation based on the availability and status of guidance documents and standard specifications and details during the Permit term. In addition, some Permittees did not demonstrate that they adapted guidance documents to local considerations in the Previous Permit.¹⁸⁵

- (5) Continuing to implement the tools developed during the Previous Permit to track and map completed public and private green infrastructure projects, and making the information publicly available.

Nearly all GI Plans reference tracking tools currently in development by the County stormwater programs, with a statement that the tools include or will include components to make certain information publicly available. However, some GI Plans suggest that green infrastructure implementation information submitted in tabular format in Annual Reports satisfies this subprovision. It does not. The tools in development generally appear appropriate to meet this Provision, but additional information is needed as discussed below. Each GI Plan that references a County stormwater program's tracking tool, many of which are based on ArcGIS online or AGOL, and a few of which utilize GreenPlan-IT, appropriately commits to contributing data to it once the tool is ready, and many GI Plans discuss local tracking tools that will likely be discontinued once the County tracking tools are ready. However, most GI Plans do not say when the respective County tracking tool will be completed, or whether or how the tools will be available to the public, and if yes, what information will be made available. Some GI Plans say only that the tools have or will have mapping capabilities accessible at least by Permittee staff, but not necessarily by the public. Some plans say that "non-regulated project installations of green infrastructure are tracked as feasible in the same manner as regulated projects."

The requirements for the tracking tool during the Current Permit term are further specified in Provision C.3.j.v. (see below).

- (6) Continuing to adopt or amend policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Plan in accordance with the requirements of this Provision, as necessary.

This requirement ensures implementation of green infrastructure and is based on the need to reduce the discharge of pollutants in storm water in a more resilient, sustainable way as described above.

- (7) Continuing to conduct outreach and education.

Education and outreach, both internally and externally, are important to realizing green infrastructure projects to reduce the discharge of pollutants in storm water.

Provision C.3.j.ii.(2) describes the Numeric Implementation requirements, which are summarized below followed by a rationale for the requirements:

- (1) By June 30, 2027, the Permittees are required to implement, or cause to be implemented, green infrastructure retrofit projects within their jurisdictions in the acreages set forth in Table H-1 of Attachment H. The retrofit acreages cannot encompass Regulated Projects under Provision C.3.b.

For Table H-1 of Attachment H, Permittees were assigned three acres of non-Regulated Project impervious surface retrofit per 50,000 population using the 2019 U.S. Census Bureau Population Estimate, prorated, with a minimum requirement of 0.2 acres and a maximum requirement of five acres. That retrofit expectation, to be accomplished during the Permit term as described in Provision C.3.j.ii, is far below the ultimate need for retrofit in the Permittees' jurisdictions, considering drivers such as the need to accomplish TMDL wasteload allocations and to reduce the discharge generally of urban runoff pollutants through the MS4. However, the retrofit requirement ensures each Permittee builds capacity by completing or meaningfully participating in at least one project. Permittees are expected to use their GI Plans to help inform the selection of retrofit projects. In addition, the retrofit requirement uses population as a rough proxy for Permittee capacity to complete retrofit work. In combination with the acreage maximum of five acres, the retrofit requirement is intended to be a flexible and doable goal during this Permit term. The minimum retrofit requirement ensures that each Permittee uses that experience to build its institutional capacity for implementing green infrastructure within its jurisdiction. The maximum retrofit requirement reduces the retrofit requirements only for a handful of the larger Permittees, one of which (the City of San Jose) will likely exceed five acres of non-Regulated Project retrofit in any case because of its consent decree with San Francisco Baykeeper, as discussed in the subsequent paragraph. These retrofit assignments, when summed regionally for the Permittees will result in about 217 acres of non-Regulated Project impervious surface retrofitted by the expiration date of the Permit, which will make a significant incremental step towards addressing the otherwise unaddressed adverse stormwater quality impacts of Permittee's rights of way, particularly those smaller public streets projects that are not otherwise subject to the same clean water controls as Provision C.3.b. Regulated Projects.

- (2) The retrofit acreages are required to address pollutants discharges from MS4s because the Permittees have substantial areas of impervious surface—

comprised in large part of their existing public roads and parking areas—that discharge urban runoff pollutants to the MS4, but on which projects are not being completed that fall into Regulated Project categories. As such, they are unlikely to be retrofitted with clean water controls and will continue to discharge urban runoff pollutants in the absence of a retrofit requirement. Regulated Projects addressed in Provision C.3.b are only a fraction of the thousands of acres of impervious surfaces in the area covered by this Order. All impervious surfaces contribute pollutants to stormwater runoff, with those in higher density land uses contributing more pollutants. Accordingly, in order to reduce the discharge of storm water pollutants from MS4s to the maximum extent practicable and help attain TMDL wasteload allocations, additional impervious surface areas must be addressed beyond the Regulated Projects. As explained below, other jurisdictions in the State of California and elsewhere in the United States have MS4 NPDES Permits with similar non-Regulated Project numeric retrofits requirements that supplement their retrofit requirements for Regulated Projects.

- (3) Pursuant to its consent decree with San Francisco Baykeeper (effective August 11, 2016),¹⁸⁷ and through projected rates of public and private development and redevelopment, as reported in its GI Plan,¹⁸⁸ the City of San Jose is required to appropriate \$100 million over the next ten years, subject to meet and confer and other terms of the consent decree, to implement the projects in its Green Stormwater Infrastructure Plan. The Green Stormwater Infrastructure Plan forecasts retrofit of roughly 1750 acres of impervious surface between 2020 and 2030, and roughly an additional 8,500 acres of impervious surface between 2030 and 2040, much of which will necessarily be comprised of non-Regulated Projects. Therefore, San Jose alone is likely to satisfy 100 percent of the Santa Clara County Permittees' Provision C.3.j.ii.(2) Numeric Implementation retrofit requirement (other than the minimum 0.2 acres required for each Permittee).
- (4) The San Mateo County Permittees' Orange Memorial Park Regional Project is located in the City of South San Francisco, and will address runoff from over 6,500 acres of land from six neighboring jurisdictions: portions of the City of Colma, the City of Daly City, the City of Pacifica, South San Francisco, Caltrans ROW, and Unincorporated San Mateo County.¹⁸⁹ This regional project may satisfy a portion of the San Mateo County Permittees' Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, depending on the outcome of

¹⁸⁷ https://baykeeper.org/sites/default/files/press_release/Baykeeper-San%20Jose%20Stormwater%20suit%20settlement%20agreement.pdf

¹⁸⁸ <https://www.sanjoseca.gov/your-government/environment/our-creeks-rivers-bay/green-infrastructure>

¹⁸⁹ <https://www.ssf.net/departments/public-works/engineering-division/capital-improvement-program/orange-memorial-park-regional-storm-water-capture-project>

Provision C.3.c.i.(2)(c)(ii).a. (e.g., if it results in a Permit amendment allowing the crediting of certain alternative treatment systems).

- (5) A study in Washington State found that imperviousness could serve as a proxy for aquatic system health.¹⁹⁰ It found that ten percent impervious area was a threshold at or above which there was demonstrable, and probably irreversible, loss of aquatic system function, reflected by measured changes in channel morphology, fish and amphibian populations, vegetation succession, and water chemistry. Even lower levels of urban development were observed to cause significant degradation in sensitive waterbodies and a reduced, but less well quantified, degree of loss throughout the system as a whole. This suggests that successful corrective measures must not simply protect or restore the structure of individual stream or wetland elements; buffers around waterbodies must be combined with watershed-level restrictions on the rate and duration of stormwater discharge, as loss of instream fish habitat cannot be repaired by in-stream engineered structures alone. The study did not establish an imperviousness threshold for degradation of San Francisco Bay Area streams. However, in finding significant degradation of waters in Washington State at levels of imperviousness that are well below those of many Bay Area watersheds, the study suggested that there is a need for substantial reductions over time from current levels of directly connected impervious surface. This adds support for the Permit's requirements to implement measures to control discharges from both existing and new impervious surfaces, including public roads.

Many Permittees' jurisdictions have untreated impervious area cover that is substantially larger than ten percent. The Permittees' GI Plans' projected retrofit by Regulated Projects and non-Regulated Projects by 2020 (the existing condition), 2030, and 2040, demonstrate that this amount is expected to continue during this and future Permit terms. Therefore, the requirements included in Provision C.3.j.ii.(2) are intended to increase the pace at which Permittees address the pollutant loading and hydromodification impacts from their impervious surfaces.

- (6) The Permittees' existing commitments for green infrastructure implementation in GI Plans are insufficient to address the problem associated with impervious surfaces. With few exceptions, the GI Plans do not commit to accelerate the existing rate of green infrastructure implementation, or to retrofit existing impervious surfaces (particularly, in the public right of way), with clean water controls to address urban runoff discharges, beyond what MRP 2 already required for Regulated Projects using an LID approach. Consequently, the GI

¹⁹⁰ Consequences of Urbanization on Aquatic Systems – Measured Effects, Degradation Thresholds, and Corrective Strategies. Derek B. Booth and Lorin E. Reinelt. King County Surface Water Management Division, Seattle, WA. 1993.

Plans are limited in the extent to which they would reduce the adverse water quality impacts of urban runoff on receiving waters over time.

For example, one Permittee's Capital Improvement Plan indicates consideration of numerous projects with potential for green infrastructure implementation, including miles of street projects, but its GI Plan sets a retrofit target of only 0.8 acres of public impervious surface by 2040, for both Regulated and non-Regulated public projects. Another Permittee's GI Plan sets a retrofit target of only one acre of public impervious surface by 2040.

These outcomes represent a missed opportunity, in that the Previous Permit's green infrastructure planning requirement was included as an alternative to expanding the Regulated Project definitions to include all new and redevelopment projects that create or replace 5,000 square feet of impervious surface, and road projects that just replace existing impervious surface area. That is, in the Previous Permit, green infrastructure planning was included in part to provide municipalities the opportunity to evaluate and account for smaller area regulated projects and road replacement projects as part of their GI Plans, and develop commitments to implementation that would be more efficient and effective for them than a Permit requirement to include all such projects.

- (7) Many GI Plans do include some public projects in their green infrastructure retrofit targets, but among those public projects, most are Regulated Projects. One GI Plan, the City of San Jose's, includes substantial public non-Regulated Project green infrastructure implementation, but as described previously, that is largely an outcome of San Jose's 2016 consent decree with the San Francisco Baykeeper, demonstrating that municipal commitment of funding to green infrastructure retrofit has the potential to result in substantial implementation. Overall, the contribution to the retrofits targets presented in the GI Plans by non-Regulated (public) Projects is small relative to the contribution by Regulated (private) Projects.
- (8) When the green infrastructure retrofit targets as presented in the GI Plans are summed and considered against estimates of county and regional impervious surface cover, the resulting data describes the relative retrofit that is projected to take place through 2040 at the regional scale. According to the GI Plans, based on the Regulated Project definitions from the Previous Permit and without the numeric implementation requirements included in this Provision in the Permit, for private and public, Regulated and non-Regulated, parcel based, green streets and regional projects, the projected retrofits by 2020, 2030, and 2040 by county stormwater programs are summarized in Table A-4:

Table A-4. GI Plan-estimated retrofit

Permittees	2020	2030	2040
Alameda	2%	3%	3%
Contra Costa	1%	2%	3%
San Mateo	1%	2%	4%
Santa Clara	2%	5%	12%
Solano	6%	8%	10%
Total	2%	4%	6%

GI Plan Long-Term Retrofit. The numbers in each County's row in this table have the respective County's total impervious surface as a denominator, based on the NLCD 2016 Developed Imperviousness Descriptor (CONUS).¹⁹¹ The numbers in the final row of this table, Total, has the five Counties' total impervious surface as a denominator; since these numbers are percentages of the total five-County impervious surface, they do not sum the above columns.

This shows that despite the opportunity given to flexibly capture smaller projects in GI Plans in lieu of a numeric permit requirement in MRP 2, the Permittees have not committed to accelerating the existing rate of green stormwater infrastructure implementation, or to retrofit existing impervious surfaces with clean water controls to address urban runoff pollutant discharges from existing impervious surfaces, beyond what MRP 2 already required for Regulated Projects.

- (9) The inclusion of numeric retrofit acreages is consistent with other relevant NPDES Stormwater Permits, which include similar non-Regulated Project numeric retrofits requirements that supplement their retrofit requirements for Regulated Projects.

The City of Portland's MS4 NPDES Discharge Permit (effective January 31, 2011)¹³² requires each co-permittee to implement one non-regulated public right-of-way project before the end of the permit term. Analogous requirements for the completion of at least one public retrofit project are included in the City of Salem's NPDES MS4 Discharge Permit (effective December 30, 2010)¹³⁷ and the City of Eugene's NPDES MS4 Discharge Permit (effective December 30, 2010).¹⁴¹

The State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s (effective August 1, 2019)¹³⁴ requires Permittees to achieve 300 Structural Stormwater Control (SSC)

¹⁹¹ <https://www.mrlc.gov/data>

Program Points (225 points from projects in the design stage and 75 points from completed projects) by the third year of the permit term. Appendix 12¹⁹² of that permit provides instructions regarding which types of projects are qualifying, and regarding how to calculate the SSC Program Points that those projects are worth (starting with Table 3 of Appendix 12).

The points system offers a flexible approach to retrofit. It requires implementation of retrofit actions that are beyond work that would otherwise be required under that permit. However, it allows implementation of a range of actions to protect and improve water quality, such as new LID BMPs, retrofit of existing controls to expand capacity, permanent removal of impervious surfaces, and landscape restoration to reduce hydromodification impacts.

Similar to the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s,¹³⁴ in U.S. EPA's Draft NPDES Stormwater Permit for the City of Tacoma's MS4,¹⁹³ the permittee is required to implement a Structural Stormwater Controls Program to prevent or reduce impacts to receiving waters caused by discharges from the MS4 that are not adequately controlled by other existing actions required by the permittee's Stormwater Management Program (SWMP) Plan;¹⁹⁴ towards that end the permittee's SWMP Plan requires it to achieve 300 SSC Program Points by December 31, 2022, to address impacts that are not adequately controlled by the other required actions of the SWMP Plan. Structural stormwater control program points are calculated per Appendix 12¹⁹² of the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s.¹³⁴

Likewise, in U.S. EPA's Draft NPDES Stormwater Permit for Pierce County's MS4,¹⁹⁵ the permittee is required to implement a Structural Stormwater Controls Program to prevent or reduce impacts to receiving waters caused by discharges from the MS4 that are not adequately controlled by other existing actions required by the permittee's Stormwater Management Program (SWMP) Plan;¹⁹⁶ towards that end the permittee's SWMP Plan requires it to achieve 300 SSC Program Points by December 31, 2022 (225 design-stage retrofit incentive

¹⁹² Accessed on July 30, 2021, from:

<https://apps.ecology.wa.gov/paris/DownloadDocument.aspx?id=279051>

¹⁹³ U.S. EPA NPDES Permit No. WAS026689, accessed on July 30, 2021, from:

<https://www.epa.gov/npdes-permits/draft-npdes-stormwater-permit-city-tacoma-ms4-washington>

¹⁹⁴ City of Tacoma, Stormwater Management Program (SWMP) Plan, March 2021. Accessed on July 30, 2021, from:

https://www.cityoftacoma.org/UserFiles/Servers/Server_6/File/cms/Surfacewater/SWMPUpdates/Final%20Draft%20SWMP%20Update_2021.pdf

¹⁹⁵ <https://www.epa.gov/npdes-permits/proposed-stormwater-permit-pierce-county-ms4>

¹⁹⁶ Pierce County, Stormwater Management Program Plan, 2020. Accessed on July 30, 2021, from:

<https://www.piercecountywa.gov/DocumentCenter/View/92121/2020-SWMP?bidId=>

points; 75 complete or maintenance stage incentive points), to address impacts that are not adequately controlled by the other required actions of the SWMP Plan. Structural stormwater control program points are calculated per Appendix 12¹⁹² of the State of Washington's NPDES and State Waste Discharge General Permit for Discharges from Large and Medium MS4s.¹³⁴

The State of Maryland's NPDES General Permit for Discharges from Small MS4s (effective October 31, 2018)¹⁴³ makes progress towards the nutrient and sediment load reductions required to address the Chesapeake Bay TMDL, as specified in Maryland's Watershed Implementation Plan, by requiring its permittees to commence restoration efforts for twenty percent of existing developed lands that have little or no stormwater management by 2025, such as by requiring its permittees to perform watershed assessments, identify water quality improvement opportunities, secure appropriate funding, and develop an implementation schedule to show the twenty percent impervious area restoration requirement will be achieved by 2025. Such restoration efforts may include the use of environmental site design practices, structural stormwater BMPs, retrofitting, stream restoration, or other alternative restoration practices. The actions taken by those Maryland permittees to address the Chesapeake Bay TMDL are similar in nature to actions the Permittees could take to achieve wasteload allocations for pollutants including mercury and PCBs. Though it is likely that the Permittees will implement actions similar to those in Maryland because they are reasonable and cost effective given the suite of available options, they have alternative options, such as diversion to the sanitary sewer.

Driven by Chesapeake Bay and Anacostia River TMDLs, the 2010 MS4 permit issued to Montgomery County by the State of Maryland required the County to retrofit 20 percent (4,292 acres) of its "older, untreated, or poorly-treated impervious surfaces by 2015."^{197,198} Those retrofits may consist of the use of environmental site design and other nonstructural techniques, structural stormwater practice retrofitting, and stream channel restoration. The permit's retrofit requirement was primarily a TMDL-driven goal. Provision C.3.j.ii.(2)'s retrofit requirement is based both on reducing pollutants to the MEP and achieving the Hg and PCBs TMDL WLAs (see, e.g., Provisions C.11.e and C.12.f). Montgomery County's permit indicates a level of retrofit effort that exists elsewhere, which is far above what Provision C.3.j cumulatively requires (216.92 acres) for multiple jurisdictions.

U.S. EPA's NPDES Permit for Washington, D.C. (effective June 22, 2018)¹⁴² requires the permittee – in order to achieve pollutant reductions, demonstrate progress toward achieving applicable TMDL WLAs by achieving a collective

¹⁹⁷ <https://www.montgomerycountymd.gov/water/stormwater/ms4.html>

¹⁹⁸ Cameron, et al., 2011. *Green Stormwater Retrofits: Objectives and Costing*. In *Low Impact Development Technology: Design Methods and Case Studies*, ASCE, Clar et al., eds.

reduction in all TMDL pollutants of concern in stormwater other than trash per the permit's retention requirements, and meeting other water quality objectives – to implement a total of 1,038 new Acres Managed by the end of the Permit term beyond the existing Acres Managed at the time of the Permit effective date, divided between three major basins, of which at least 62 acres must be located in public rights of way. One “Acre Managed” is one acre of land treated by stormwater control measures to the applicable standard established in the permittee's stormwater regulations or consistent with the relevant voluntary program. Further explanation of this concept is provided in the Washington, D.C., NPDES MS4 Permit. For example, a development project required to meet the 1.2 inch retention standard for development and redevelopment greater than or equal to 5,000 square feet, which will implement 1.2 inches of retention across five acres through any combination of onsite and/or offsite retention controls, is equivalent to five “Acres Managed.” The permittee is also required to install 350,000 square feet of new green roofs by the end of the permit term, and plant 6,705 trees annually during the permit term. Like the Montgomery County permit, the Washington D.C. permit also indicates a level of retrofit effort that exists elsewhere, which is far above what Provision C.3.j cumulatively requires (216.92 acres) for multiple jurisdictions.

Provision C.3.j.ii.(2)(b)-(c) allows Permittees to meet the retrofit requirements in Table H-1 of Attachment H on a countywide basis or outside their jurisdictions, but requires them provide no less than 0.20 acres of green infrastructure within their jurisdictions, or contribute substantially to such a green infrastructure project outside of their jurisdictions (but within their County). A substantial contribution could mean that Permittees are providing a significant portion of project funding, including in-kind funding or staff services such as development of designs, provision of land, or contracting for project implementation.

- This affords Permittees flexibility in meeting the retrofit acreages, and ensures that a minimum amount of green infrastructure is implemented in the Permittees' jurisdictions to address storm water pollutants. It also ensures that Permittees build the institutional capacity necessary to implement green infrastructure projects within their jurisdictions. There is also a requirement to ensure that countywide total retrofit acreages are met.

Provision C.3.j.ii.(2)(d) allows non-Regulated Projects and green infrastructure beyond the minimum required by Provision C.3.d for a Regulated Project to be counted towards the numeric requirements in Table H-1 of Attachment H. If any portion of such projects is later used as a part of an Alternative Compliance exchange to offset the treatment required by a Regulated Project pursuant to Provision C.3.e.i, then that portion may no longer be counted towards the retrofit acreage requirements in Table H-1 of Attachment H. This allows Permittees to benefit from requiring more than the minimum requirements to achieve cleaner storm water.

Provision C.3.j.ii.(2)(e)-(f) provides the timeframe for counting projects for the acreage requirements in Table H-1. Including projects completed after January 1, 2021, accounts for and encourages early green infrastructure projects completed by Permittees. June 30, 2027, is used as the end of the timeframe because that is when the Permit expires. For project not yet completed by this date, funding them by this date provides the necessary assurance of their completion; in the subsequent permit term, the Water Board may consider requiring such projects to be completed by the end of that permit term.

Provision C.3.j.ii.(2)(g) explains that Numeric Implementation pursuant to Provision C.3.j.ii.(2) can be counted towards analogous Provision C.12 numeric implementation retrofit requirements for old industrial areas, as long as they satisfy other aspects of the Provision C.12 requirement. This ensures that the Permittees get credit for work done under Provision C.3.j.

Provision C.3.j.ii.(2)(h) allows Permittees to credit the acreage of impervious surface created or replaced as part of Provision C.3.b.ii.(5) Road Reconstruction Projects to count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.

- This allowance is temporary, for this Permit term, as by the end of the Permit term, the Permittees will have further developed the institutional capacity necessary for continued green infrastructure implementation and, as such, may have a future-looking plan that will incorporate regulated road projects into the Permittees' broader retrofit expectations.

Provision C.3.j.ii.(2)(i) recognizes the unique challenges inherent in the implementation of green infrastructure in small rural Permittee jurisdictions by allowing those Permittees to collectively submit an optional proposal for pilot projects investigating alternative green infrastructure techniques. If approved (or conditionally approved) by the Executive Officer, this proposal will allow (or conditionally allow) Permittees with small rural jurisdictions to meet part or all of their Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements via alternative green infrastructure techniques.

Provision C.3.j.ii.(2)(j) allows Permittees to submit reports pursuant to Provision C.3.j.v.(5) estimating the benefit provided by new or existing ordinances that require Regulated Projects to treat significantly more impervious surface than the minimum required by Provision C.3, where such additional treatment may count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements. Permittees whose reports are approved by the Executive Officer may use the benefit estimated for the current Permit term in the reports to offset up to 25 percent – but by no more than 1 acre – of their individual Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.

- The offset is a one-time credit and its purpose is to help Permittees complete the planning and policy work sufficient to leverage private development and redevelopment projects within their jurisdictions to assist Permittees with achieving

compliance with the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements. The Provision C.3.j.ii.(2)(j) offset is temporary, for this Permit term.

Provision C.3.j.ii.(3) describes the Design and Other Criteria that all green infrastructure projects built pursuant to Provision C.3.j must comply with Provisions C.3.c and C.3.e-h because they represent the Water Board's determination of maximum extent practicable-compliant designs that appropriately address identified water quality impacts.

- All green infrastructure projects built pursuant to Provision C.3.j are also required to comply with Provision C.3.d. However, with cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the C.3.j.i.(2)(g) approach outlined in the Previous Permit, significant amounts of run-on from adjacent areas, or other substantial constraints identified by the Permittees), and with reporting in their Annual Reports, Permittees may use the Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis Green Infrastructure Facility Sizing for Non-Regulated Street Projects, submitted in June 2019¹⁹⁹ as allowed by Provision C.3.j.i.(2)(g) of the Previous Permit, to size non-Regulated green streets projects (green infrastructure projects sited in the public road right of way). If they do so, the Permit requires Permittees to comply with the Water Board's June 21, 2019, conditional approval of that submittal,²⁰⁰ which provides qualifiers to, and the conditions under which, the alternative sizing criteria may be used for non-Regulated green streets projects.

Provision C.3.j.ii.(4) describes a Technical Working Group (TWG) that Water Board encourages Permittees to participate in, along with staff and impartial science experts, to discuss and recommend long-term green infrastructure goals, targeting, in particular, Permittees' public streets. The goals will likely inform subsequent Permit terms, with the idea that each subsequent Permit term would make significant progress towards the goals. The purpose of this Provision is therefore to, over the long-term, address pollutant loading and hydrologic impact from areas of Permittees' jurisdictions that are not otherwise addressed by Provision C.3.b Regulated Projects. The goals will likely inform changes to Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements. The long-term goal may include consideration of crediting public and private projects that implement non-bioretention stormwater controls which provide water quality and hydrologic benefit that are reasonably comparable to the Permit's expectations in

¹⁹⁹*Guidance for Sizing Green Infrastructure Facilities in Street Projects with companion Analysis: Green Infrastructure Facility Sizing for Non-Regulated Street Projects.* BASMAA, June 2019. https://www.cccleanwater.org/userfiles/kcfinder/files/BASMAA_Guidance%20for%20Sizing%20Green%20Infrastructure%20Facilities%20in%20Street%20Projects%20with%20companion%20Analysis%20June%202019.pdf. Accessed on July 27, 2021. Or: <https://basmaa.org/wp-content/uploads/2021/08/BASMAA-Guidance-for-Sizing-Green-Infrastructure-Facilities-in-Street-Projects-with-Companion-Analysis.pdf>; accessed on August 8, 2021

²⁰⁰*Conditional Acceptance of Guidance for Sizing Green Infrastructure Facilities in Street Projects.* June 21, 2019.

Provisions C.3.c-d and C.3.g. The long-term goal may include consideration of other LID practices such as those proposed pursuant to Provision C.3.d.iv.

Provisions C.3.j.iii-iv. (No Missed Opportunities and Participate in Processes to Promote Green Infrastructure) are required to ensure green infrastructure projects remain a critical part of the Permittees' storm water control and outreach efforts.

Provision C.3.j.v. (Tracking and Reporting Progress) is necessary to track the progress of green infrastructure projects and Permit compliance. It requires Permittees to track and map non-Regulated green infrastructure projects built pursuant to Provision C.3.j, in the same manner as Regulated Projects, using the tracking and mapping tools developed during the Previous Permit. This Provision requires that the tools must include a component that is available to the public, which is advertised on individual Permittee websites and on County stormwater program websites and as appropriate is advertised in other locations. This Provision lists the minimum level of detail that must be provided by the tracking and mapping tool for each project built pursuant to Provision C.3.j. If the tools contain additional information which has not been made available to the public such as detailed design information, incurred or planned operation and maintenance costs and operation and maintenance frequency, condition, and pollutant loads treated, that information is required be made available to Water Board staff upon request. The tracking and mapping tools were required to be completed in the Previous Permit, and therefore the Permit requires the Permittees to certify in the 2023 Annual Reports that the tracking and mapping tools have been completed and are being implemented. Reporting by the Permittees on the implementation of non-Regulated Projects may inform modifications to Provision C.3.j in future permits.

C.4. Industrial and Commercial Site Controls

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C) requires “[a] description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system.” Other specific legal authority is cited below.

Specific Provision C.4. Requirements

Provision C.4.a (Legal Authority) Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Provision C.4.b (Inspection Plan) Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that Permittees must “identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.” The Permit continues to require Permittees to implement an industrial and commercial site controls program to reduce pollutants in runoff from all industrial and commercial sites/sources.

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that Permittees “[p]rovide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity.”

The Water Board has added to this Permit additional types of businesses for Permittees to include in their Industrial and Commercial Business Inspection Plan (Inspection Plan). These are restaurants and other food service businesses, as well as supermarkets or large grocery stores with outdoor waste storage or cardboard compacting areas. Waste from these types of businesses is reasonably likely to contribute stormwater runoff pollution, and they are a common focus area of other stormwater program inspection requirements. Restaurants and other food service businesses have the potential to discharge pollutants associated with their activities such as food debris, trash, and other

wastes, including those from disposable food packaging and utensils. Similarly, supermarkets and large grocery stores have an elevated threat of potential discharges of trash, fluid milk products, food debris, and other wastes.

Vehicle fueling facilities were previously included in MRP 2 due to the reasonable likelihood to contribute to stormwater discharges of hydrocarbons, heavy metals and other chemicals used as fuel additives. The Water Board has now specified sites with “fueling activities” as a type of business to include in Permittees’ Inspection Plans. This is to clarify that sites with those activities are still considered a fueling facility, even if found in business types that perform other activities, and they have the same associated pollutants with the potential to discharge in stormwater.

These additional business types and similar activities are also components of business inspection requirements in other Phase I MS4 permits, including Los Angeles, Salinas, the City of South Lake Tahoe, El Dorado County, Placer County, and Seattle, WA.

The Permit continues to require Permittees to identify industrial sites and sources subject to the Industrial General Permit or other individual NPDES permit. U.S. EPA recognized that stormwater from industrial facilities would be regulated by both municipal and industrial stormwater programs, finding that:

- 1. Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system’s discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system. It is anticipated that general or individual permits covering industrial storm water discharges to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well as other terms specific to the Permittee.²⁰¹*

and:

- 2. Although today’s rule will require industrial discharges through municipal storm sewers to be covered by separate permit, U.S. EPA still believes that municipal operators of large and medium municipal systems have an important role in source identification and the development of pollutant controls for industries that discharge storm water through municipal separate storm sewer systems is appropriate. Under the CWA, large and medium municipalities are*

²⁰¹ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48056

responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program.²⁰²

This Permit does not require the Permittees to submit the list of facilities scheduled for inspection each year with annual reports. Instead, Permittees are to add each year's inspection list to the Inspection Plan as part of the annual update to the Inspection Plan. Permittees may choose to keep their annual lists in their databases or in electronic form. The annual lists must be made readily available to Water Board staff or its representatives upon request.

Water Board staff reviewed about 20 percent of the Permittees' Inspection Plans during the MRP 1 term. A few of those Inspection Plans also provide detailed flow charts or instructions on how to conduct inspections, fill out the inspect forms, execute enforcement actions, conduct follow-up, and fulfill tracking and reporting for the MRP. These comprehensive Inspection Plans help ensure inspection consistency and serve as excellent training documents for new inspection staff.

Provision C.4.c (Enforcement Response Plan) requires the Permittees to implement and update, as needed, their Enforcement Response Plan (ERP) that serves as a reference for inspection staff to take consistent and timely responses to actual or potential stormwater pollution problems discovered in the course of industrial/commercial stormwater inspections. The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP.

Because ERPs are unique to each Permittee, this Permit continues to allow each Permittee flexibility to customize the ERP to fit its legal authority and its regulatory program. However, all ERPs must require corrective actions to be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered; and short timeframes for implementing corrective actions encourage businesses to prevent potential discharges from becoming actual discharges. Permittees must also require active non-stormwater discharges to cease immediately, timely implementation of corrective actions to clean up the discharge, and timely implementation of measures to prevent future active discharges.

²⁰² Ibid

This Permit standardizes and clarifies the ERP requirements in provisions C.4, C.5, and C.6. to eliminate ambiguity in the requirements.

Provision C.4.d (Inspections) continues MRP 2's consolidation of the inspection requirements from MRP 1's Provision C.4.b. Inspection Plan and C.4.c. ERP together into this Provision. Inspection frequencies are determined by each Permittee in its Inspection and Enforcement Response Plans.

U.S. EPA guidance states "management programs should address minimum frequency for routine inspections." The U.S. EPA Fact Sheet—Visual Inspection says "[t]o be effective, [visual] inspections must be carried out routinely."²⁰³

The Water Board has declined to reduce the record keeping and reporting requirements of this permit. The Permit requires that only basic information be recorded for each inspection. This information is necessary to document each inspection to develop a history for the facility.

This information is also needed for Water Board staff to evaluate MS4 programs. Annual reports need to provide enough detail to show compliance with the Permit terms. For instance, during the MRP 1 term, annual reports showed few violations relative to the number of inspections completed. This did not match with the field inspection experience of Water Board staff. Further investigation showed that some Permittees did not consider potential discharges to be violations. Such investigation by Water Board staff would be made more difficult without the required information about inspections.

MRP 1 exempted verbal warnings from being reported in the annual reports. Water Board staff expected verbal warnings to have very limited use and only given for very minor issues that do not warrant anything in writing. However, from Water Board inspections, and annual report and ERP reviews, we concluded that many Permittees issue warnings in response to potential discharges, such as housekeeping issues, evidence of actual non-stormwater discharges that are not ongoing during an inspection, lack of BMPs, inadequate BMPs, and inappropriate BMPs. Even though potential discharges need timely corrective actions, it was unclear if these potential discharges were corrected in a timely manner because there was no written documentation on the potential discharges or verbal warnings issued. Only observed non-stormwater discharges were considered violations and issued some type of written enforcement action. Examples of potential discharges.

MRP 2 required, and this Permit continues to require, reporting of all potential and actual non-stormwater discharges based on the enforcement levels in each Permittee's ERP, so that Water Board staff can evaluate whether Permittees are conducting appropriate follow-up.

²⁰³ U.S. EPA. 1999. 832-F-99-046, "Storm Water Management Fact Sheet – Visual Inspection."

Some Permittees feel that a 10-business day window to implement corrective action is not necessary and even unreasonable during the dry months for potential discharges and especially for minor potential discharges. Permittees have the discretion to add a rationale for allowing a longer time period, especially for corrective actions that require things such as capital improvements, revisions to standard operating procedures, and staff training. However, prompt implementation of corrective actions for most potential discharges minimizes the risk of potential discharges becoming actual discharges. A number of Permittees communicated that they prefer shorter corrective action timeframes because sites tend to take care of them right away versus forgetting about the corrective actions when given a longer corrective action timeframe. Throughout the MRP 1 term, Water Board staff asked Permittees for a list of minor potential discharges. The only minor issue listed was open dumpster/garbage can lids. Water Board staff concurred that open dumpster/garbage can lids is minor, can be corrected immediately, and would not require any additional follow-up. Water Board industrial and construction inspectors consider open dumpster/garbage can lids and small amounts of trash/debris on the ground to be minor violations that can quickly be corrected, because staff at the industrial or construction sites can immediately cover the dumpsters and pick up and appropriately dispose of the trash. Water Board inspectors note those issues and corrective actions in their inspection reports.

Provision C.4.f (Staff Training) requires the Permittees to conduct annual staff trainings for inspectors. Trainings are necessary to keep inspectors current on enforcement policies and current MEP BMPs for industrial and commercial stormwater runoff discharges.

C.5. Illicit Discharge Detection and Elimination

Legal Authority

The following legal authority applies to section C.5:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) provides that the Permittee shall include in their application “the location of known municipal storm sewer system outfalls discharging to waters of the United States.”

Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(5) provides that the Permittee shall include in their application “[t]he location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall have adequate legal authority to “[p]rohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(F) provides that the Permittee shall have adequate legal authority to “[c]arry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires that the Permittee have a “description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires a “program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires a “description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires a “description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires a “description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) requires a “description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) requires a “description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.”

Fact Sheet Findings in Support of Provision C.5

- C.5-1** Discharges not comprised entirely of stormwater, not authorized by another NPDES permit, and neither exempted nor conditionally exempted in Provision C.15 are not authorized to enter the MS4 and are considered to be illicit discharges
- C.5-2** Every Permittee must have the ability to effectively prohibit non-stormwater discharges to its MS4 by detecting and eliminating illicit discharges and disposal into its MS4.
- C.5-3** Illicit discharges to the storm drain system may be detected in several ways. Permittee staff may detect discharges incidentally, and members of the public may report suspected discharges. The Permittee must have a direct means to receive, investigate, respond to, and track these reports.

Removal of Routine Collection System Screening Requirement

MRP 1 required the Permittees to perform routine surveys for illicit discharges and illegal dumping in above ground check points in the collection system including elements that are typically inspected for maintenance purposes, such as end of pipes, creeks, flood conveyances, storm drain inlets, and catch basins, to seek and eliminate illicit connections and discharges. The results of the screenings were reported in annual reports. No illicit connections were reported. However, Permittees have found illicit discharges during the screenings and they were cleaned up. It is unclear if personnel conducting the screenings reported these illicit discharges to the illicit discharge staff for investigation and tracking. In MRP 2, we added language to C.5.c. – Spill, Dumping, and Complaint Response Program to ensure that illicit discharges found by municipal staff conducting routine maintenance and inspection activities on the collection system are reported to the illicit discharge staff for investigation and tracking. This is based on the federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3), which requires “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Specific Provision C.5 Requirements

Provision C.5.a (Legal Authority) requires each Permittee have adequate legal authority to prohibit illicit discharges to storm sewers as required by federal regulations at 40 CFR 122.26(d)(2)(i)(B). Illicit and inadvertent connections to MS4 systems result in a discharge into the MS4 that is not comprised entirely of stormwater. Every Permittee must have the ability to discover, inspect, enforce its ordinance, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

Provision C.5.b (Enforcement Response Plan) continues to require Permittees to implement and update, as needed, their Enforcement Response Plans (ERPs) to ensure consistent and timely responses to illicit discharges and connections to the MS4. The ERP provides guidance on (1) progressively strict enforcement to achieve timely compliance, (2) follow-up inspection, (3) referral to another agency, (3) appropriate time periods for implementation of corrective actions, and (4) the roles and responsibilities of staff responsible for implementing the ERP. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Permittees must also require immediate cessation of active discharges, and timely implementation of corrective actions to clean up the discharge and implementation of measures to prevent future active discharges.

Water Board staff reviewed more than half of the Permittees' ERPs during MRP 1. Almost all of those Permittees have one ERP to satisfy the ERP requirements in provisions C.4, C.5, and C.6. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in MRP 1. Therefore, the ERP requirements in this Permit are standardized in provisions C.4, C.5, and C.6.

Provision C.5.c (Spill, Dumping, and Complaint Response Program) Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer." This Provision of the Permit requires the Permittees to establish and maintain a central point of contact including phone numbers for spills, dumping, and complaints reporting. Reports from the public and other Permittee staff are an essential tool in discovering and investigating illicit discharge activities into the MS4. Maintaining contact points helps ensure that there is effective reporting to assist with the discovery of prohibited discharges. Each Permittee must have a means to adequately track suspected polluted discharges from the time they are reported until they are resolved.

Provision C.5.d (Tracking and Case Follow-up) implements the requirement in 40 CFR 122.26(d)(2)(iv)(B)(4) for permittees to have procedures to "respond to spills" by requiring Permittees to substantiate, track, and monitor illicit discharges reported to the spills, dumping, and complaint response system (Provision C.5.c). This requirement is included so Permittees can demonstrate compliance with the ERP requirements in

Provision C.5.b and to ensure that illicit discharge reports receive adequate follow-up and resolution.

All municipalities, counties, district, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in California are required to report sanitary sewer overflows to the California Integrated Water Quality System Project pursuant to the State Water Board's Order No. 2006-003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) and Order WQ 2013-0058-EXEC (Adopting Amended Monitoring Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems order. Sewage discharges that are reported to the California Integrated Water Quality System Project do not need to be tracked and reported in Provision C.5.

Provision C.5.e (Control of Mobile Sources) requires each Permittee to implement a program to reduce the discharge of pollutants from mobile businesses. Examples of mobile businesses include mobile cleaners that wash vehicles, building exteriors, sidewalks, and plazas, cleaners that wash restaurant smoke hood filters, mats, and other equipment, and mobile fueling businesses that fill up gas tanks for vehicles owned by carshare companies or certain technology company employees. The purpose of this section is to implement oversight and control of pollutants associated with mobile business sources to the MEP.

MRP 2 required Permittees to develop and implement a program to reduce the discharge of pollutants from mobile businesses and to develop an inventory of mobile businesses. Permittee experience during the previous permit term showed that it is difficult to track and register mobile businesses. Mobile businesses may have a business license from another municipality, another county, or have no business license. They often work outside of normal business hours (e.g., restaurant cleaners may work late at night when restaurants are closed), and so are difficult to observe and inspect. This Permit shifts the enforcement approach focus from developing an inventory of mobile businesses and direct observation of mobile business activities to reiterating that the entity hiring the mobile business and the mobile business themselves are responsible for any polluted discharge from the business or property.

This Permit keeps the outreach requirement to develop and distribute educational materials about stormwater pollution prevention to mobile businesses. Permittees may develop their own education and outreach materials, or may participate in a countywide or regional program. In order to understand what Permittees are doing to control pollutants from mobile sources, this Permit continues most requirements of MRP 2 and collects data on each Permittee's implementation of the provision.

Provision C.5.f (Municipal Separate Storm Sewer System (MS4) Map) As part of the permit application process, federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) and 40 CFR 122.26(d)(1)(iii)(B)(5) specify that dischargers must identify the location of

any major outfall that discharges to waters of the United States, as well as the location of major structural controls for stormwater discharges. A major outfall is any outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) or; for areas zoned for industrial activities, any pipe with a diameter of 12 inches or more or its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). The permitting agency may not process a permit until the applicant has fully complied with the application requirements.²⁰⁴ If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.²⁰⁵ All Permittees have complied with this requirement. This Permit continues to require the Permittees to advertise the availability of the maps of their MS4 system and to make available these maps to the public upon request.

In addition to the mapping information previously submitted, this Permit also requires Permittees to identify information missing from the current MS4 maps and develop a plan and schedule to compile additional storm sewer system information. Previous permits did not require Permittees to submit regular updates to their MS4 system maps, so the current status of the overall MS4 systems as compared to previous maps is unknown. To effectively manage and respond to illicit discharges, as well as potential impacts from conditionally exempted discharges like emergency firefighting discharges, it is essential for Permittees to understand their current MS4 system layout and conditions, as well as how discharge sources are connected to outfalls that discharge to their system.

The proposed updates that this Permit requires are consistent with the requirements of other stormwater permits in the state. For instance, the California Permit for Small MS4s,²⁰⁶ the City of Long Beach MS4 Permit,²⁰⁷ and the City of Salinas MS4 Permit²⁰⁸ also require Permittees to keep their MS4 system maps up to date by submitting annual revisions or verifying that no modifications to the system occurred during the annual reporting period.

The City of Salinas MS4 Permit requires the city to maintain a Stormwater Information Management System that includes a map of MS4 system components with information

²⁰⁴ 40 CFR 124.3 (applicable to state programs, see section 123.25).

²⁰⁵ 40 CFR 122.26(d)(1)(iv)(E).

²⁰⁶ California State Water Board, NPDES Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), NPDES Permit No. CAS000004, Order No. 2013-0001-DWQ, as amended.

²⁰⁷ Los Angeles Regional Water Board, Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges from the City of Long Beach, NPDES Permit No. CAS004003, Order No. R4-2014-0024.

²⁰⁸ Central Coast Regional Water Board, NPDES Permit and WDR for the City of Salinas Municipal Stormwater Discharges, NPDES Permit No. CA0049981, Order No. R3-2019-0073, adoption date: September 20, 2019, effective date: October 1, 2019.

such as the name, type, location, and discharge information. The map must identify open channels and other conveyance features, inlets to the MS4, and connections over 8 inches in diameter to MS4 conveyances. The map must also include components that influence maintenance capacity and conveyance, such as cleanouts, pump stations, diversion structures, and trash capture devices.

The City of Long Beach MS4 Permit requires an electronic map that includes the location and length of all open channel and underground pipes 18 inches in diameter or greater, as well as storm drain outfall catchment areas for each major outfall. The Los Angeles County MS4 Permit also requires an up-to-date and accurate electronic map of the county's MS4.²⁰⁹ In addition to outfalls, the required map components include the location and length of open channels and underground storm drain pipes with a diameter of 36 inches or greater.

²⁰⁹ Los Angeles Regional Water Board, NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach, NPDES Permit No. CAS004001, Order No. R4-2012-0175, as amended.

C.6. Construction Site Control

Legal Authority

The following legal authority applies to section C.6:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D) requires “[a] description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) requires “[a] description of procedures for site planning which incorporate consideration of potential water quality impacts.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) requires “[a] description of requirements for nonstructural and structural best management practices.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) requires “[a] description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) requires “[a] description of appropriate educational and training measures for construction site operators.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control, “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that “[t]he following categories of facilities are considered to be engaging in ‘industrial activity’ for the purposes of this subsection: [...] (x) Construction activity including cleaning, grading and excavation activities [...].”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.6.

- C.6-1** Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed the natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters.
- C.6-2** Excess sediment can cloud the water, reducing the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants, such as nutrients, metals, and oils and grease. Permittees are on-site at local construction sites for grading and building permit inspections, and also have in many cases dedicated construction stormwater inspectors with training in verifying that effective BMPs are in place and maintained. Permittees also have effective tools available to achieve compliance with adequate erosion control, such as stop work orders and citations.
- C.6-3** Mobilized sediment from construction sites can flow into the MS4 and then into receiving waters. According to the 2004 National Water Quality Inventory,²¹⁰ States and tribes report that sediment is a major cause of impairment of assessed rivers and streams. The Inventory found that sediment impairs 35,177 river and stream miles (14 percent of the impaired river and stream miles). Sediment runoff rates from construction sites are typically 10 to 20 times greater than runoff rates from agricultural lands, and 1,000 to 2,000 times greater than runoff rates from forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades.²¹¹

Specific Provision C.6 Requirements

Provision C.6.a. Legal Authority for Effective Site Management. Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) requires that each Permittee demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.” This section of the Permit requires each Permittee to have the authority to require year-round, seasonally and phase appropriate effective erosion control, run-on and runoff control, sediment control, active treatment systems, good site management,

²¹⁰ http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

²¹¹ U.S. EPA. December 2005. *Stormwater Phase II Final Rule Fact Sheet Series – Construction Site Runoff Control Minimum Control Measure*. EPA 833-F-00-008. Fact Sheet 2.6.

and non-stormwater management through all phases of site grading, building, and finishing of lots. All Permittees should already have this authority.

In its Phase II Compliance Assistance Guidance, U.S. EPA says that “[i]nspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties.”²¹² To issue warnings and assess penalties during inspections to achieve timely corrective actions from sites, inspectors must have the legal authority to conduct enforcement.

Provision C.6.b. Enforcement Response Plan (ERP). This section requires each Permittee to implement and update, as needed, its Enforcement Response Plan (ERP), which serves as a reference for inspection staff to take consistent actions and timely response to achieve effective, timely corrective compliance from all public and private construction site owners/operators.

U.S. EPA supports enforcement of ordinances and permits at construction sites, stating “[e]ffective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations.”²¹³ In addition, U.S. EPA expects permits issued to municipalities to address “weak inspection and enforcement.”²¹⁴ For these reasons, the enforcement requirements in this section have been established, while providing sufficient flexibility for each Permittee’s unique stormwater program. Prior to the issuance of MRP 1, Water Board staff had noted deficiencies in the Permittees’ enforcement procedures and implementation during inspections. The most common issues found were that enforcement was not firm and appropriate to correct the violation, and that repeat violations did not result in escalated enforcement procedures. Therefore, MRP 1 required Permittees to develop ERPs. MRP 2 required Permittees to implement the ERPs, and the Permit continues to require Permittees to implement the ERPs.

ERPs are unique to each Permittee. As such, this Permit continues to frame ERP requirements broadly. For instance, at minimum, an ERP must include: (1) progressively strict enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP. The broad framework allows each Permittee flexibility to customize the ERP to fit its legal authority and ordinary business practices. However, for an ERP to be effective, Permittees must require immediate cessation of active non-stormwater discharges, timely implementation of corrective actions to clean up the discharge, and implementation of measures to prevent future active discharges. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are

²¹² U.S. EPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, pp.4-31

²¹³ U.S. EPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.

²¹⁴ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p.48058.

discovered. Construction sites are required by the statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction General Permit) to keep supplies on hand to address BMP issues rapidly. In a few cases, such as slope inaccessibility, it may require longer than 10 days before crews can safely access an eroded area. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. The Permittees' tracking data needs to provide a rationale for the longer compliance timeframe.

Water Board staff reviewed more than half of the Permittees' ERPs during the MRP 1 term. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in MRP 1. Therefore, this Permit standardizes and clarifies the ERP requirements in provisions C.4, C.5, and C.6 to eliminate any ambiguity in the requirements.

Provision C.6.c. Best Management Practices Categories. This section requires all Permittees to require all construction sites to have year-round and seasonally appropriate and effective BMPs in the following six categories: (1) erosion control, (2) run-on and runoff control, (3) sediment control, (4) active treatment systems, (5) good site management, and (6) non stormwater management. These BMP categories match those listed in the Construction General Permit and reflect the nature of the potential water quality threats posed by construction sites, as well as the means of addressing those potential threats. Because sites' terrain, soil type, soil disturbance, and proximity to waterbodies differ, it would be unduly prescriptive and inappropriate to require all sites to implement a specific set of BMPs. This Permit, like the Construction General Permit, allows Permittees the flexibility to determine if the BMPs for each construction site are effective and appropriate and to change BMPs quickly to prevent discharges into storm drains, waterways, and rights-of-way. Appropriate BMPs for the different site conditions can be found in different handbooks and manuals, such as CASQA's Construction BMP Handbook.²¹⁵

Sediment runoff at construction sites without adequate BMP implementation greatly exceeds natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. This is because the vegetation clearing, mass grading, lot leveling, and excavation at construction sites expose soil to wind and water, increasing sediment mobilization, runoff into the MS4, and deposition in receiving waters. This occurs in both the wet season and in unexpected rain events during the dry season (defined as May 1 through September 30), which can be significant. Therefore, Permittees should ensure that construction sites have materials on hand for rapid rain response during the whole year, including during the dry season.

Provision C.6.c.ii.(1).d requires "project proponents to minimize grading during the wet season and scheduling of grading with seasonal dry weather periods to the extent

²¹⁵ CASQA, 2019. *Construction BMP Online Handbook*. <https://www.casqa.org/resources/bmp-handbooks/construction>

feasible.” If grading does occur during the wet season, Permittees must require project proponents to (1) implement additional BMPs as necessary, (2) keep supplies available for rapid response to storm events, and (3) minimize wet-season, exposed, and graded areas to the absolute minimum necessary.

“Steep slopes are the most highly erodible surface of a construction site,”²¹⁶ and unstabilized slopes at construction sites are significant sources of erosion and sediment discharges during rainstorms. Therefore, this Permit requires slope stabilization on all active and inactive slopes during rain events regardless of the season, except in areas implementing advanced treatment. Slope stabilization is also required on inactive slopes throughout the rainy season. As noted by U.S. EPA, “slope length and steepness are key influences on both the volume and velocity of surface runoff. Long slopes deliver more runoff to the base of slopes and steep slopes increase runoff velocity; both conditions enhance the potential for erosion to occur.”²¹⁷ Where vegetation preservation or replanting is not possible, soil stabilization is the most effective measure in preventing erosion on slopes. Research has shown that effective soil stabilization can reduce sediment discharge concentrations up to six times, as compared to soils without stabilization.²¹⁸ Slope stabilization at construction sites for erosion control is already the consensus among the regulatory community and is found throughout construction BMP manuals and permits. For these reasons, this Permit requires Permittees to ensure that sites implement slope stabilization techniques that are appropriate for the grade and height of the affected slopes.

This Permit also requires Permittees to ensure that construction sites permanently stabilize disturbed soils, e.g., by revegetation, at the conclusion of each phase of construction.²¹⁹ To maximize the degree to which vegetation can effectively stabilize soils, Permittees must ensure that construction sites are revegetated as early as feasible. Revegetation reduces the threat of polluted stormwater discharges from construction sites. A survey of grading and clearing programs found one-third of the programs without a time limit for permanent revegetation, “thereby increasing the chances for soil erosion to occur.”²²⁰ U.S. EPA states “the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development.”²²¹

²¹⁶ Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out?* The Practice of Watershed Protection. p. 6.

²¹⁷ U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

²¹⁸ Schueler, T., and H. Holland. 2000. “Muddy Water In—Muddy Water Out?” *The Practice of Watershed Protection*. p. 5.

²¹⁹ Ibid.

²²⁰ Ibid. p. 11.

²²¹ U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

To ensure the MEP standard and water quality standards are met, active treatment systems may be necessary at some construction sites. Requirements for active system requirements are located in the Construction General Permit, Attachment F.

Provision C.6.d. Plan Approval Process. U.S. EPA guidance emphasizes the importance of good site planning,²²² early incorporation of stormwater controls into a construction project, and implementation of a comprehensive stormwater management system—that is, an effective combination of controls appropriate to the project and site.²²³ This section of the Permit requires the Permittees to review project proponents' stormwater management plans for compliance with local regulations, policies, and procedures before ground is broken on a construction project, and during the site plan review process or earlier, as recommended by U.S. EPA.²²⁴ Site plan review aids in compliance and enforcement efforts since it alerts the "MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities."²²⁵

Provision C.6.e. Inspections. This Provision requires permittees to ensure accountability of construction site managers through a program of regular inspections, consistent enforcement, and meaningful tracking. These three elements will help ensure that effective construction pollutant controls are in place in order to minimize construction polluted runoff to the storm drain and waterbodies.

The level of effort required by this section remains unchanged from the previous permit. The monthly or more frequent inspections during the wet season of all construction sites disturbing one or more acre of land, all hillside projects, and all high priority sites reflects the need to ensure that potentially changing conditions on sites are appropriately being addressed during the part of the year when there is a greater threat associated with a greater probability of precipitation, and has been shown during previous permit terms to adequately identify problem sites. Inspections must focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six BMP categories. Each Permittee must implement its ERP and require timely corrections of all actual and potential problems observed. All corrective actions must be implemented before the next rain event, but no longer than 10 business days after the violations are discovered. A longer time period to implement corrective actions is allowed with a reasonable rationale. All inspections must be recorded on a written or electronic inspection form, and also tracked in an electronic database or tabular format.

²²² *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.

²²³ *Ibid*.

²²⁴ U.S. EPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4–30.

²²⁵ *Ibid*. pp. 4–31.

MRP 1 required Permittees to have the legal authority to require effective construction stormwater controls at all construction sites, regardless of the amount of soil disturbed. Water Board staff has observed disturbed construction sites where minimal BMPs were being implemented, and has seen stormwater transport construction site pollutants into the storm drain. For these reasons, ideally, all construction sites with a grading permit from a Permittee should have stormwater inspections during the rainy season to ensure adequate BMPs are implemented and construction pollutants are not entering the storm drain. Construction sites with steeper slopes pose a more-significant threat of discharging construction-related pollutants to the storm drain because they are likely to have higher runoff velocities and because their BMPs must be more robust and more-robustly installed and maintained in order to control pollutants, as compared to less-steep sites. Water Board staff has observed stormwater move sediment and other construction-related pollutants into storm drains at sites ranging from those with flat slopes to those with slopes greater than 15 percent. Because of the relatively greater threat posed by steeper sites, MRP 2 added, and this Permit continues a specific requirement to inspect all hillside projects disturbing greater than or equal to 5,000 square feet of soil. For those Permittees that do not have a hillside development map or definition, this Permit defines hillside development as development occurring on land with a slope greater than or equal to 15 percent.

MRP 1 required Permittees to report the number of violations fully corrected prior to the next event, but no longer than 10 business days after the potential and actual discharges are discovered or otherwise considered corrected in a timely, though longer period. This proved challenging for many Permittees because they track enforcement actions and not discreet violations. While information on how many potential and actual discharges are discovered and resolved would be valuable, the Water Board recognizes that such reporting requirements would require significant changes in databases for some Permittees. Therefore, this Permit allows Permittees to either report by enforcement actions or discrete number of potential and actual discharges.

Provision C.6.f. Staff Training. This section of the Permit requires Permittees to conduct staff trainings for municipal staff at least every other year. These trainings have been found to be extremely effective means to educate inspectors and to inform them of any changes to local ordinances and state laws. Trainings provide valuable opportunity for Permittees to network and share strategies used for effective enforcement and management of erosion control practices.

C.7. Public Information and Outreach

Legal Authority

The following legal authority applies to section C.7:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires “[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways [sic] and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(5) requires “a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) requires “[a] description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

Fact Sheet Findings in Support of Provision C.7.

- C.7-1** An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues.
- C.7-2** An informed community also ensures greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.
- C.7-3** The public education programs should use a mix of strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.²²⁶
- C.7-4** Target audiences should include (1) government agencies and official to achieve better communication, consistency, collaboration, and coordination at the federal, state, and local levels and (2) K-12/Youth Groups.

²²⁶ U.S. EPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.²²⁷

Specific Provision C.7 Requirements

Provision C.7.a. Outreach Campaigns. Permittees have long implemented outreach campaigns to educate their residents on different stormwater runoff pollution prevention messages. The Permit continues to require a minimum of one public outreach campaign. It is anticipated that Permittees will continue cooperatively implementing the *Our Water, Our World* pesticide use reduction outreach campaign developed by BASMAA. Individual Permittees, their respective countywide programs, and cooperative inter-Permittee efforts, will either continue existing public outreach campaigns or start new ones. This Permit removes specificity regarding the expected public outreach campaigns and how they must be conducted, recognizing that the Permittees have decades of public outreach experience and allowing flexibility to determine how best reach their residents. Permittees can utilize various electronic and print media, and paid and free media to target different audiences. This Permit still requires an effectiveness assessment/evaluation after each outreach campaign to enable Permittees to determine whether stormwater messaging has reached residents and resulted in behavior changes.

Provision C.7.b. Stormwater Pollution Prevention Education. The public needs information on how to minimize stormwater pollution. MRP 1 and MRP 2 required Permittees to have and publicize a centralized stormwater point of contact to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives. The Permittees list this point of contact on the brochures, pamphlets, and fact sheets they circulate on stormwater pollution prevention issues. Some Permittees provide these materials in languages other than English. Many Permittees have also placed these pollution prevention materials on their websites. Since citizens increasingly use the internet to search for information, this Permit continues to require all Permittees to place information on watershed characteristics and stormwater pollution prevention on their websites.

Provision C.7.c. Public Outreach and Citizen Involvement Events. This Permit continues to require Permittees to host citizen involvement events to ensure that pollution prevention messaging reaches a broad spectrum of citizens. Long-established outreach mechanisms, such as staffing tables or booths at fairs, street fairs, and other community events, help to ensure that citizens who do not actively search for information on Permittees' website may still have access to information. Permittees shall continue utilizing appropriate outreach materials, such as printed materials, newsletter/journal articles, and videos. Permittees shall also utilize existing community outreach events, such as the Bringing Back the Natives Garden Tour. It is important to provide opportunities for citizens to actively practice being good stewards of our

²²⁷ Ibid.

environment. The combined specified numbers of events for Public Outreach and Citizen Involvement in this Permit are, for the most part, slightly less than the combined specified numbers in MRP 1. However, many Permittees claimed credit for both public outreach and citizen involvement for a number of events each year.

Provision C.7.d. Watershed Stewardship Collaboration. Community watershed groups are comprised of active citizens, but they function best when they receive support from and can coordinate actions with Permittees.

Provision C.7.e. School-Age Children Outreach. Outreach to school children has proven to be a particularly successful program with an enthusiastic audience who are efficient to reach. School children also take the message home to their parents, neighbors, and friends. In addition, they are the next generation of decision-makers and consumers.

Provision C.7.f. Outreach to Municipal Officials. It is important for Permittee staff to periodically inform municipal officials of the permit requirements and also future planning and resource needs driven by the permit and stormwater regulations.

C.8. Water Quality Monitoring

Legal Authority

Broad Legal Authority: CWA §§ 308(a), 402(a)(2); Federal NPDES regulations 40 CFR §§122.26(d)(2)(i)(F), 122.41(h), (j), (l), 122.42(c), 122.44(i), and 122.48.

Specific Legal Authority: Permittees must conduct a comprehensive monitoring program and submit reports as required under the laws cited above. CWC Section 13383 further authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

Fact Sheet Findings in Support of Provision C.8

C.8-1 In response to questions regarding the type of WQBELs that are most appropriate for NPDES stormwater permits, and because of the nature of stormwater discharges, U.S. EPA established the following approach to stormwater monitoring:

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.²²⁸

According to U.S. EPA, the benefits of stormwater runoff monitoring include, but are not limited to, the following:

- (1) Providing a means for evaluating the environmental risk of stormwater discharges by identifying types and amounts of pollutants present;
- (2) Determining the relative potential for stormwater discharges to contribute to water quality impacts or water quality standard violations;
- (3) Identifying potential sources of pollutants; and
- (4) Eliminating or controlling identified sources more specifically through permit conditions.²²⁹

²²⁸ U.S. EPA. 1996. Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits. Sept. 1, 1996. In it, U.S. EPA recognizes that storm water discharges are highly variable both in terms of flow and pollutant concentrations and the relationships between discharges and water quality can be complex.

²²⁹ U.S. EPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

- C.8-2** A workshop held by U.S. EPA Region 9²³⁰ identified key attributes of a more effective approach to monitoring, and how that monitoring may intersect with other evaluation, tracking, and reporting efforts:
- (1) Clear management questions related to water quality outcomes and activity implementation.
 - (2) A process for conducting effectiveness assessment that is tailored to the program element and the management questions being asked.
 - (3) Use of improved monitoring designs (location, scale, frequency, methods) to detect a “signal” or change in pollutant loading in stormwater or receiving waters for POCs.
 - (4) Monitoring efforts that complement activity tracking and assessment to better evaluate effectiveness of treatment or source controls (e.g., are they implemented correctly, receiving proper maintenance, and operating as expected?) and improve the basis for assessing cause and effect.
 - (5) Documented monitoring and evaluation designs coupled with identification of program modifications envisioned to improve effectiveness, inform program adjustment and new stormwater management initiatives, and achieve intended outcomes.

The workshop recommended elements to be included in a national-level guide on monitoring and assessing program effectiveness; in the meantime, those elements on their own are a useful guide for monitoring and evaluation programs:

- (1) Framing key monitoring/evaluation questions and designing approaches to fit the questions. This could include alternative program designs with advice on assembling the components (e.g., receiving water, outfall, and in-system water monitoring; BMP effectiveness evaluation; activity tracking of treatment and source controls; modeling) to inform assessment of the overall program and demonstrate effectiveness. This should show how to build a sound analytical framework up front to demonstrate why a set of approaches will likely succeed in assisting program management and defining or tracking compliance and effectiveness.
- (2) Considerations for adapting monitoring/evaluation questions over time, with a reasonable limit on the creation of new questions.

²³⁰ Improving Stormwater Program Monitoring, Evaluation, Tracking, and Reporting: Workshop Report and Recommendations. U.S. EPA Region 9, October 12, 2018.
https://www.epa.gov/sites/production/files/2018-10/documents/improving_stormwater_program_monitoring-10-12-2018.pdf

- (3) Examples of successful local approaches that better associate monitoring/evaluation design with program effectiveness, compliance assessment, and the ability for program managers to make management decisions.
- (4) Suggested evaluation methods to assess BMP effectiveness over time.
- (5) Available monitoring technologies and best practices that clearly link the monitoring objectives with the experimental design, including all aspects of data collection, data management, data analysis, and reporting formats.
- (6) Compiling monitoring program costs to help show the wide range of program expenditures, how monitoring data are used to inform program decisions, and how to better articulate the value of the data.
- (7) Explanations of modeling approaches and how they can relate to monitoring and adaptive management.

The workshop identified the following performance metrics to establish more meaningful MS4 program evaluation and monitoring:

- (1) Percent of impervious areas addressed for stormwater management.
- (2) Condition or “cleanliness” of streets as an indicator of potential pollution from runoff.
- (3) Percent of impervious surface areas directly connected to the storm drain system.
- (4) Modeled volume of flow to the storm drain system used as a surrogate for pollutant contributions.
- (5) Percent of waterbodies in a community that are fishable and swimmable.
- (6) Loss of beneficial use of a waterbody (e.g., beach closure downtimes).
- (7) Measured level of awareness of citizens regarding stormwater pollution and the community’s program.
- (8) Increasing number of illicit discharges reported annually; indicating heightened awareness.
- (9) Budget for stormwater infrastructure improvements.

The workshop identified an overall need for permitting authorities to improve the clarity of monitoring and evaluation permit requirements and to use thoughtful methods/designs that will yield actionable data. Further, some participants noted that permits may be able to provide choices or flexibility for monitoring approaches and help incentivize better designs. Flexible permit requirements can support adaptation of monitoring to evolve with program

needs, with the potential questions to be addressed changing over time. Critically, for such an approach to succeed, it may be necessary to discontinue some monitoring efforts to redirect resources to more pertinent or valuable monitoring. The Water Board intends to pursue that recommended approach, as this Permit has replaced the Creek Status Monitoring and Stressor/Source Identification Projects Subprovisions with LID Monitoring which has been identified as a more useful program at this point in time, and the Water Board will consider changes to LID Monitoring in the subsequent permit to further increase its utility.

C.8-3 Provision C.8 requires Permittees to conduct water quality monitoring, including ambient monitoring, MS4 outfall monitoring and monitoring of receiving waters, in accordance with 40 CFR 122.44(i) and 122.48. One purpose of water quality monitoring is to demonstrate the effectiveness of the Permittees' stormwater management actions pursuant to this Permit and, accordingly, demonstrate compliance with the conditions of the Permit. Other water quality monitoring objectives under this Permit include:

- (1) Assess the chemical, physical, and biological impacts of urban runoff on receiving waters;
- (2) Characterize stormwater discharges;
- (3) Assess compliance with Total Maximum Daily Loads (TMDLs) and Wasteload Allocations (WLAs) in impaired waterbodies;
- (4) Assess progress toward reducing receiving water concentrations of impairing pollutants;
- (5) Assess compliance with numeric and narrative water quality objectives and standards;
- (6) Identify sources of pollutants;
- (7) Assess stream channel function and condition, as related to urban stormwater discharges;
- (8) Assess the overall health and evaluate long-term trends in receiving water quality; and
- (9) Measure and improve the effectiveness of the Permittees' urban runoff control programs and the Permittees' implemented BMPs.

C.8-4 Monitoring programs are an essential element in the improvement of urban runoff management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach, also called the "continuous improvement" approach, used to meet the Maximum Extent

Practicable (MEP) standard where applicable. When water quality data indicate that water quality standards or objectives are not being met, particular pollutants, sources, and drainage areas can be identified and targeted for urban runoff management efforts. The iterative process in Provision C.1 related to water quality standards exceedances could potentially be triggered by monitoring results. Ultimately, the results of the monitoring program must be used to focus actions to reduce pollutant loadings to comply with applicable WLAs and protect and enhance the beneficial uses of the receiving waters in the Permittees' jurisdictions and the San Francisco Bay.

C.8-5 Under the CWA, NPDES permits must contain conditions that require both monitoring and reporting of monitoring results to ensure compliance (see 33 U.S.C. § 1342(a)(2); 40 C.F.R. § 122.44(i)). The regulations provide, in pertinent part:

In addition to the conditions established under §122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable. . . .

(i) Monitoring requirements. In addition to § 122.48, the following monitoring requirements:

(1) To assure compliance with permit limitations, requirements to monitor:

(i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit;

(ii) The volume of effluent discharged from each outfall;

(iii) Other measurements as appropriate including pollutants in internal waste streams under § 122.45(i); pollutants in intake water for net limitations under § 122.45(f); frequency, rate of discharge, etc., for noncontinuous discharges under § 122.45(e); pollutants subject to notification requirements under § 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the CWA.

(iv) According to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter 1, subchapter N or O. . . .

(2) *Except as provided in paragraphs (i)(4) and (i)(5) of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year. . . .*

40 C.F.R. § 122.44(i)(1)-(2). This section allows “for monitoring other than mass or volume, namely some ‘other measurement specified in the permit [] for each pollutant limited in the permit’” (*NRDC v. U.S.EPA*, (2nd Cir. 2015) 808 F3d 556, 582.). The regulations at 40 C.F.R. § 122.48 state that all permits specify the “[r]equired monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring.”

Consistent with the federal regulations, water quality monitoring requirements in Provision C.8 require specific monitoring that will yield data that is both representative of the monitored activity and necessary to assure compliance with the requirements of the Permit, as described below.

C.8 includes monitoring²³¹:

- (1) At or near outfalls during storm events to determine the concentrations (mass) of pollutants of concern and to obtain information to identify source areas or contaminated watersheds. These concentration data, in combination with other information, are used to provide modeled loading estimates to assess progress on attaining TMDLs, including assuring compliance with the required load reductions in the permit (C.8.f. Pollutants of Concern Monitoring). This monitoring supports estimates of MS4 pollutant loads to receiving waters and requires data collection to support planning for control actions (e.g., identification of source areas or contaminated watersheds). The latter includes monitoring effectiveness of control measures and identifying pollutant source areas; and
- (2) In receiving waters, during wet and dry weather, to assess the extent to which LID controls and trash controls mitigate the physical, chemical and biological impacts of MS4 discharges to those receiving waters, and to therefore guide the management and implementation of existing and future LID controls and trash controls (C.8.d. LID Monitoring and C.8.e Trash Receiving Water Monitoring).

Provision C.8.d LID Monitoring requires monitoring of LID facilities, systems, components, including different LID design variations, in order to measure compliance and determine the effectiveness of LID controls, including the

²³¹ Provisions C.14, C.16, C.18, and C.19 contain additional monitoring and reporting requirements to assure compliance with the requirements therein.

extent to which LID controls address the physical, chemical and biological impacts to receiving waters caused by MS4 discharges. Provision C.8.d outlines the minimum requirements that Permittees' LID Monitoring programs must comply with and what must be included in LID Monitoring Plans. A Technical Advisory Group (TAG) consisting of Permittee representatives will guide the development and implementation of the LID Monitoring Plans.

Provision C.8.e Trash Monitoring requires monitoring of MS4 outfalls, direct monitoring of receiving waters, and indirect monitoring of receiving waters (adjacent on-land areas, when direct in-stream monitoring is not practicable). The types, frequencies, and intervals of monitoring are expected to yield information that will verify whether implemented full trash capture systems or equivalent trash controls result in no or low levels of trash discharges from MS4s.

Receiving water monitoring is specified here in addition to, and in some cases as a substitute for, outfall monitoring, for the following reasons. First, there are no end-of-pipe limits in the Permit to measure. Instead, the Permit requires, for example, PCB load reductions; outfall monitoring would not allow the Water Board to assess whether the PCB limits are met. Second, there are hundreds if not thousands of outfalls in the Permittees' jurisdictions and it is impractical to monitor every single outfall due to both cost and safety concerns. Monitoring a subset of outfalls would provide information about MS4 discharges at those specific locations at only one limited point in time, which leads to the third point that outfall monitoring is time- and spatially limited. In contrast, the required receiving water monitoring integrates the physical, biological and chemical effects to the water body of all MS4 discharges from multiple outfalls over multiple storms (i.e., time and space), yielding more useful data than outfall monitoring to determine compliance with the Permit. Receiving water monitoring is done in a probabilistic or rotating basis, depending on the parameter, again yielding more useful data than fixed-location monitoring. Also, both dry weather and storm flows are addressed in receiving water monitoring, whereas outfall monitoring is normally conducted only during storm events. Dry weather discharges can constitute a significant portion of annual pollutant loadings from storm systems in urban areas (NRC 2008).

To provide an example of how receiving water monitoring better captures permit compliance, consider an illicit discharge of chloramine from a swimming pool to an MS4. Both outfall and receiving water monitoring could detect the discharge. However, outfall monitoring would need to be done at the exact location and time of an illicit discharge; otherwise it would go undetected, because the discharge would have moved through the outfall and into receiving waters.

Receiving water monitoring as a means to evaluate compliance with permit conditions is supported by the National Research Council (NRC). In *Urban Stormwater Management in the United States*, NRC states that the quality of stormwater from urbanized areas has been well-characterized.²³² Continuing MS4 end-of-pipe monitoring produces data of limited usefulness because of a variety of shortcomings (as detailed in the report). The NRC strongly recommends²³³ that MS4 programs modify their evaluation metrics and methods to include biological and physical monitoring and an increased emphasis on watershed scale analyses to ascertain what is actually going on in receiving waters, much like what is required in the permit. Further, NRC finds that biological assessments respond to the range of non-chemical stressors identified as being important in urban waterways including habitat degradation, hydrological alterations, and sediment and siltation impacts, as well as to the influence of nutrients and other chemical stressors where chemical criteria do not exist or where their effects are difficult to measure directly (e.g., episodic stressors).

Prior to the current Permit, Permittees completed substantial biological and physical creek status monitoring to evaluate MS4 impacts on streams. Continuing creek status monitoring will not generate substantial new actionable information. Baseline monitoring of all creeks has been completed and there is no near-term expectation for change. Consideration of additional or updated biological and physical monitoring will be relevant in future permit terms to evaluate long-term management actions that would cause a measurable change in creek conditions. Creek status monitoring and the associated stressor source Identification monitoring have been replaced in the current Permit with LID systems and trash control effectiveness monitoring, which are high priorities due to the high benefit costs of those actions, and more specific and near-term relevant pollutants of concern receiving water monitoring requirements.

U.S. EPA Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits notes that:

...storm water monitoring can be conducted for two basic reasons: 1) to identify if problems are present, either in the receiving water or in the discharge, and to characterize the cause(s) of such problems; and 2) to assess the effectiveness of storm water controls in

²³² National Research Council. 2008. *Urban Stormwater Management in the United States*.

²³³ U.S. EPA has endorsed the NRC's recommendation (See, e.g., EPA's District of Columbia MS4 Permit No. DC0000221 Fact Sheet, 2011.).

reducing contaminants and making improvements in water quality.

Permit Provision C.8 satisfies these two objectives by requiring monitoring that will provide Permittees with sufficient data to pinpoint sources of pollutants and assess the effectiveness of efforts to reduce pollutants, both at the source and in receiving waters.

C.8-6 The Water Quality Monitoring Provision is intended to provide answers to fundamental management questions, outlined below. Monitoring is intended to progress as iterative steps toward ensuring that the Permittees' can fully answer, through progressive monitoring actions, management questions that include the following:

- (1) Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
- (2) What is the extent and magnitude of the current or potential receiving water problems?
- (3) What is the relative urban runoff contribution to the receiving water problem(s)?
- (4) What are the sources of urban runoff that contribute to receiving water problem(s)?
- (5) Are conditions in receiving waters getting better or worse?
- (6) What are the pollutant removal and hydrologic benefits, such as addressing impacts associated with hydromodification, of different types of LID facilities, systems, components, and design variations, and how do they change over time?
- (7) What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic benefit performance?

C.8-7 On April 15, 1992, the Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for San Francisco Bay. Subsequent to a public hearing and various meetings, Water Board staff requested major permit holders in the region, under authority of CWC section 13267, to report on the water quality of the Estuary. These permit holders, including the Permittees, responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Estuary Regional Monitoring Program (RMP), which produces world-class datasets on estuarine

contaminants.²³⁴ The RMP involves collection and analysis of data on pollutants and toxicity in water, sediment and biota of the Estuary. Because the RMP monitors waters in each Permittee's jurisdiction and gathers data on the pollutants controlled in this Permit, the Permittees are required to continue to report on the water quality of the Estuary, as presently required. Compliance with the requirement through participation in the RMP is considered to be adequate compliance.

C.8-8 The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout California. One purpose of SWAMP is to integrate existing water quality monitoring activities of the State Water Board and the Regional Water Boards, and to coordinate with other monitoring programs. Provision C.8 contains a framework, referred to as a regional monitoring collaborative, within which Permittees can elect to work cooperatively with SWAMP to maximize the value and utility of both the Permittees' and SWAMP's monitoring resources. In working cooperatively with SWAMP, Permittees can develop a monitoring program that evaluates waters in its jurisdiction and gathers data on each of the pollutants of concern discussed in this Permit.

C.8-9 In 1998, BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,²³⁵ a document describing a possible strategy for coordinating the monitoring activities of BASMAA member agencies. The document states:

BASMAA's member agencies are connected not only by geography but also by an overlapping set of environmental issues and processes and a common regulatory structure. It is only natural that the evolution of their individual stormwater management programs has led toward increasing amounts of information sharing, cooperation, and coordination.

In a prior permit, Permittees were given the option to implement this same concept by forming a regional monitoring collaborative, which they did. In conducting some of the monitoring required in this Provision, the Regional Monitoring Collaborative (RMC) provides efficiencies and economies of scale by performing certain tasks (e.g., planning, contracting, data quality assurance, data management and analysis, and reporting) at the regional level on behalf

²³⁴ <https://www.sfei.org/programs/sf-bay-regional-monitoring-program>

²³⁵ EcoAnalysis, Inc. & Michael Drennan Assoc., Inc., *Support Document for Development of the Regional Stormwater Monitoring Strategy*, prepared for Bay Area Stormwater Management Agencies Association, March 2, 1998.

of all Permittees. Further benefits are expected as more monitoring requirements are fulfilled through the RMC.

- C.8-10** This Permit includes monitoring requirements to ensure compliance with adopted TMDL WLAs and to provide data needed for TMDL implementation. This Permit incorporates the TMDLs' WLAs adopted by the Water Board as required under CWA section 303(d).
- C.8-11** SB1070 (California Legislative year 2005/2006) found that there is no single place where the public can go to get a look at the health of local water bodies. SB1070 also states that all information available to agencies shall be made readily available to the public via the Internet. This Permit requires water quality data to be submitted in a specified format and uploaded to a centralized Internet site so that the public has ready access to the data.

Specific Provision C.8 Requirements

Each of the components of the monitoring provision is necessary to meet the objectives and answer the questions listed in the findings above. Justifications for each monitoring component are discussed below.

C.8.a. Compliance Options. Provision C.8.a. provides Permittees options for obtaining monitoring data through various organizational structures, including use of data obtained by other parties. This is intended to achieve the following:

- Promote cost savings through economies of scale and eliminate redundant monitoring by various entities;
- Promote consistency in monitoring methods and data quality; and
- Simplify reporting.

In this Permit, all the Stormwater Countywide Programs are encouraged to work collaboratively to conduct all or most of the required monitoring and reporting on a region-wide basis. For each monitoring component that is conducted collaboratively, one report would be prepared on behalf of all contributing Permittees; separate reports would not be required from each Program. Cost savings could result also from reduced contract and oversight hours, fewer quality assurance/quality control samples, shared sampling labor costs, and laboratory efficiencies.

C.8.b. Monitoring Protocols and Data Quality. CWA regulations (40 CFR 122.41(j)(1)) require that data submitted pursuant to a NPDES permit meet certain quality standards. To achieve this, and to obtain data of known quality that can be compared to data collected in other California urban creeks, the permit requires monitoring data be collected and analyzed in accordance with the SWAMP Quality Assurance Project Plan and Standard Operating Procedures or U.S. EPA methods. The BASMAA Regional Monitoring Coalition's Creek Status Monitoring Program Quality Assurance Project Plan (January 2014) and Standard Operating Procedures (January

2014) have been deemed to be SWAMP comparable. These two BASMAA documents may be updated to reflect the changing state-of-the-science with Executive Officer's approval.

C.8.c. San Francisco Estuary Receiving Water Monitoring. The San Francisco Estuary is the ultimate receiving water for most of the urban runoff in this region. For this reason and because of the high value of its beneficial uses, Provision C.8.c requires focused monitoring on the Estuary to continue. Since the mid-1990s, Permittees have caused this monitoring to be conducted by contributing financially and with technical expertise, to the RMP. Provision C.8.c requires such monitoring to continue. The monitoring conducted through the RMP is an important component of determining compliance with receiving water limit (RWLs) in the MRP, and this monitoring complements the tributary-focused RWL and other monitoring required in Provision C.8 along with the tracking and accounting of required Permittee control actions.

RMP monitoring includes both wet season and dry season data collection in San Francisco Bay water, sediment, fish, shellfish, and birds. The analytes monitored in these media provide a comprehensive assessment of water quality in the estuary. Data are collected both in the sub-tidal (deeper) region as well as the shallow areas of the Bay where tributaries (many influenced by urban runoff) enter the Bay. The contaminant concentrations in Bay water, sediment and biota integrate all sources of contaminants (e.g., urban runoff, atmospheric deposition, wastewater treatment). Comparison of RMP data to water quality objectives allows water quality managers to determine if RWLs are achieved in the ultimate receiving water, San Francisco Bay.

C.8.d. Low Impact Development (LID) Monitoring. LID Monitoring is intended to measure compliance and effectiveness of LID implementation. It will improve the understanding of the following two management questions (which are repeated in Finding C.8-6 above) related to the implementation of LID controls:

- (1) What are the pollutant removal and hydrologic benefits, such as addressing impacts associated with hydromodification, of different types of LID facilities, systems, components, and design variations, and how do they change over time?
- (2) What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic benefit performance?

The purpose of the first management question is to confirm that Permittees' LID controls are functioning as expected over time. Perhaps some design variations provide greater performance than others. The purpose is not only to compare relative performance between different types of MRP Permittee controls but also to compare their performance against the publicly-available databases of LID performance data, such as

those of the International Stormwater BMP Database²³⁶ and SCCWRP's California BMP Effectiveness Calculator.²³⁷

The purpose of the second management question is straightforward: to assess whether LID controls that receive relatively insufficient O&M perform relatively poorly compared to LID controls that receive relatively sufficient O&M, which will directly inform management actions (such as, what O&M activities to perform, and how much of it to perform how frequently).

The Permittees are required to submit LID Monitoring Plans subject to review by a Technical Advisory Group and Executive Officer approval during the first year of the Permit term, detailing how exactly they will answer these two management questions, guided by the confines and structure of Provision C.8.d.i which describes what must be included in the LID Monitoring Plans, Provision C.8.d.ii which outlines a process for ongoing Regional Collaboration, Provision C.8.d.iii which outlines the Methods to be used to answer the Management Questions, and Provision C.8.d.iv which prescribes the Parameters that must be sampled and analyzed as well as the sampling Intensities. Once their LID Monitoring Plans have been approved or conditionally approved, the Permittees will begin implementing them by no later than the beginning of the second Water Year to occur during the Permit term, which is October 1, 2023. LID Monitoring during the first Water Year of the Permit term is not required because Permittees will need that time to develop their LID Monitoring Plans.

C.8.d.i. This Provision sets forth the minimum contents of the LID Monitoring Plans to ensure that they are properly designed to address the two management questions and to implement the requirements in Provisions C.8.d.iii-v. Executive Officer approval will ensure the LID Monitoring Plans conform to Provision C.8.d's requirements.

C.8.d.ii. Regional Collaboration requires the Permittees to form a Technical Advisory Group (TAG) to review and make recommendations on the drafting of the LID Monitoring Plans so that they are scientifically sound, and to ensure that the Permittees' sampling and analytical methodologies are regionally consistent. To further this, Water Board staff and impartial science advisors (e.g., SFEI, SCCWRP) may participate in the TAG. As the approved or conditionally approved LID Monitoring Plans are implemented, it is necessary for the TAG to provide ongoing feedback because LID Monitoring is new and therefore may need adjustments and ongoing improvements to (and adaptive management of) study design and methodology in real time during the Permit term. Impartial science advisors participating in the TAG will support these needs and will also provide feedback on lessons learned from LID Monitoring as it occurs, which will culminate in recommendations for changes to the LID Monitoring in the subsequent Permit. This Provision requires that the Permittees submit the draft LID Monitoring Plans to the TAG by March 1, 2023, so that the TAG can provide feedback, and so that

²³⁶ <https://bmpdatabase.org/get-data>

²³⁷ https://sccwrp.shinyapps.io/bmp_eval/

the Permittees can incorporate that feedback, before the final LID Monitoring Plans are required to be submitted to the Water Board for Executive Officer approval (or conditional approval) by May 1, 2023, pursuant to Provision C.8.d.vi.

C.8.d.iii. Methods describes the methods that, when implemented by the Permittees, will address the LID Monitoring Management Questions. Permittees are required to use automated samplers to collect flow-weighted composite EMCs (time-weighted composites are allowed if they have many subsamples and can be closely approximated as flow-weighted composites), simultaneously at both the inlet and outlet of each control/site (this is needed to calculate both geomean and percent reduction), because this will generate the highest quality data, and because this is the same data type as the data in the databases used to perform the power analysis (see below). Flow- or time-weighted composite EMCs involve the collection of a sample aliquot at a certain increment of flow passing through the monitored orifice, or at a certain increment of time, which is then added to a storage container to form a single composite sample. These are explained in greater detail, including different types of flow-weighted composite EMC methodologies (e.g., volume proportional to flow rate, volume proportional to flow volume increment, and time proportional to flow volume increment), in the International Stormwater BMP Database's 2009 monitoring guidance document.²⁴¹ Because this method is required, flow data can be collected using the same automated samplers.

C.8.d.iv. Parameters and Intensities defines the parameters that are fundamental to characterizing the pollutant and hydrologic mitigation that LID facilities, systems, components and design variations provide. There are two types of parameters, those that are required and those that are optional. The required parameters are: Total Hg, Total PCBs, TSS, PFAS, TPH, Total and Dissolved Copper, Flow, Total Hardness, and pH. The optional parameters are: Other Emerging Contaminants (e.g., microplastics and 6PPD-quinone) and Other Ancillary Parameters. Other Ancillary Parameters may include, but are not limited to: zinc (and other metals), temperature, conductivity, polycyclic aromatic hydrocarbons (PAHs), turbidity, pathogens (FIB), total organic carbon (TOC), dissolved organic carbon (DOC), pesticides of concern to water quality (e.g., pyrethroids, fipronil and its degradants, and neonicotinoids such as imidacloprid),²³⁸ major cations (Ca, Mg, Na, K), and major anions (SO₄, Cl). These parameters are typically found in and are of particular concern for urban stormwater discharges within the Permittees' jurisdictions. The LID Monitoring Plans must implement monitoring for the required parameters.

The LID Monitoring Plans may or may not implement monitoring for the optional parameters at each site, for example, depending on whether they will inform the relevant LID Monitoring Management Questions, and whether they are appropriate for a given site due to the characteristics of the tributary drainage area. Characteristics that

²³⁸ And other pesticides of concern to water quality, listed in Provision C.9, Pesticides Toxicity.

Permittees may consider include soil type, land use, types and loading from actual and potential sources of stormwater pollution (e.g., IGP sites and traffic loading), existing management actions and stormwater controls (both natural and engineered), and imperviousness.

Provision C.8.d.iv also specifies the minimum total number of sample events that must be collected during the Permit term as well as the minimum number of sample events that must be collected annually. The minimum annual samples are set at a level that ensures satisfactory annual progress towards the total number of required sample events, that ensures a certain minimum frequency of data collection which is important for the quality of the dataset, but that also allows for additional flexibility and cost savings by Permittees in their planning of sample events.

The total number of samples events are based on power analysis. Water Board staff utilized a method from Helsel (2020)²³⁹ to compute the power of a nonparametric test of differences between geometric means of two distributions. Water Board staff adapted an R script (power.WMW from Chapter 13) provided on a website²⁴⁰ providing supporting material for Helsel (2020). For more information on the method, please see Chapter 13 of Helsel (2020). The existing data were for total copper (combined data from SCCWRP California BMP Effectiveness Tracker and the International Stormwater BMP Database), TSS (International Stormwater BMP Database), TSS (SCCWRP California BMP Effectiveness Calculator) and Dissolved Zinc (SCCWRP California BMP Effectiveness Calculator). No data filtering was performed on these data (which possibly include outliers and instances where input:output is < 1). No transformations of the data were required because the nonparametric method does not require the data to be normally distributed.

The power analysis runs a series of t-tests to estimate how many sample events of the Permittees' LID BMPs during MRP 3 would need to be collected to determine whether such BMPs – and to the extent that those BMPs are a representative sample of the population of LID BMPs in the region, then this may be extrapolated to that regional population – belong (statistically) to the data population represented by the existing data in the databases of the International Stormwater BMP Database and the SCCWRP California BMP Effectiveness calculator.

The null hypothesis is that the geomean of the Permittees' sample data is the same as the geomean of the population of the databases, and the alternative hypothesis is the converse. A significance level and power level are specified, which are recommended as 5% and 80%, respectively, by the International Stormwater BMP Database's 2009

²³⁹ Helsel, D.R., Hirsch, R.M., Ryberg, K.R., Archfield, S.A., and Gilroy, E.J., 2020, Statistical methods in water resources: U.S. Geological Survey Techniques and Methods, book 4, chap. A3, 458 p., <https://doi.org/10.3133/tm4a3>.

²⁴⁰ <https://www.sciencebase.gov/catalog/item/5bf30260e4b045bfcae0c205>

monitoring guidance document.²⁴¹ The significance level is the probability (5%) of incorrectly rejecting the null hypothesis, and 100% percent minus the power level of 80% is the probability that a significant change will be overlooked (i.e., 20% chance that the null hypothesis will not be rejected when it should have been).

Next, the power analysis explores how many sample events are needed to reject the null hypothesis for a given magnitude of difference in the geomeans, for a given power level, using different combinations of a sample event size and the difference to detect.

For each dataset that is tested, the geomean of the performance ratios (input:output) of each sample event is calculated, which consists of a flow-weighted (or time-weighted) composite event mean concentration (EMC) taken simultaneously at an inlet and outlet of a particular bioretention cell, for a particular storm event.

Flow- or time-weighted composite EMCs involve the collection of a sample aliquot at a certain increment of flow passing through the monitored orifice, or at a certain increment of time, which is then added to a storage container to form a single composite sample. These are explained in greater detail, including different types of flow-weighted composite EMC methodologies (e.g., volume proportional to flow rate, volume proportional to flow volume increment, and time proportional to flow volume increment), in the International Stormwater BMP Database's 2009 monitoring guidance document.²⁴¹ These are the sample collection methodologies used for the data in the two aforementioned databases, and they are as well what the Permittees are required to use pursuant to Provision C.3.d.iii.

After the distributions (principally, the geomean) of the performance ratios of each sample event in a dataset are calculated, the power analysis tests for the differences between that ratio of the geometric mean of the database data to the geometric mean of the future to-be-collected data, where each such geometric mean is the geometric mean of the ratios of input:output ratios for each sample event.

For each number of total sample events to be collected over the five-year permit term (e.g., 10, 15, 20, 25...), this produces a range at 80% power, which if the geomean of future sample events falls within that range, would confirm the null hypothesis. The upper and lower bounds of the range are the ratios of the future geomean (of input:output ratios) to the database geomean (of input:output ratios); geomeans closer to the upper bound represent overperformance relative to the distribution of the database, while geomeans closer to the lower bound represent underperformance relative to the distribution of the database. In the center of the range, where the ratio of future geomean to database geomean = 1, their performance is identical. Each range represents a given number of sample events, and the range constricts incrementally as the number of sample events increases. What that translates to is that, as the number

²⁴¹ <https://bmpdatabase.org/monitoring>

of sample events increases, it is less likely to incorrectly affirm the null hypothesis, though there are diminishing returns, which is discussed next.

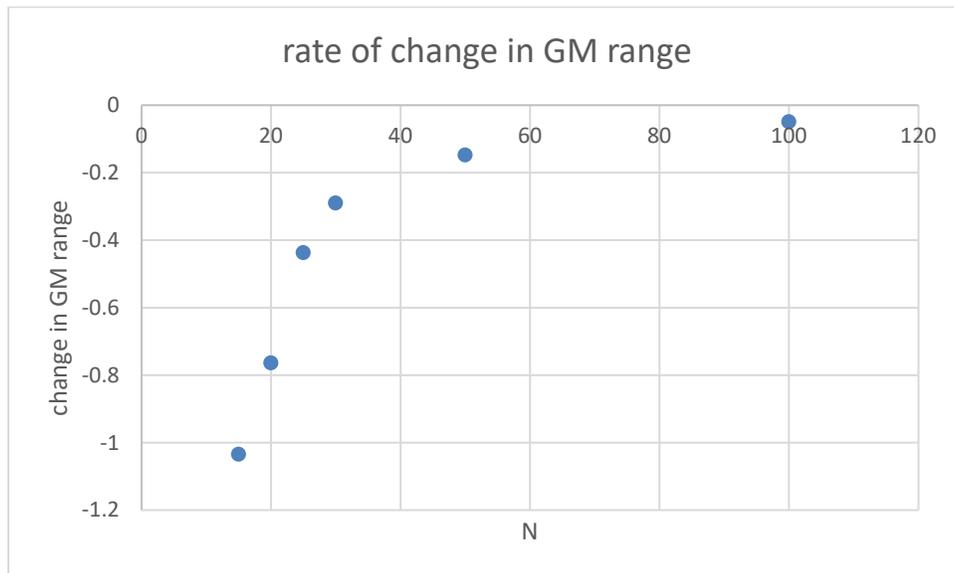
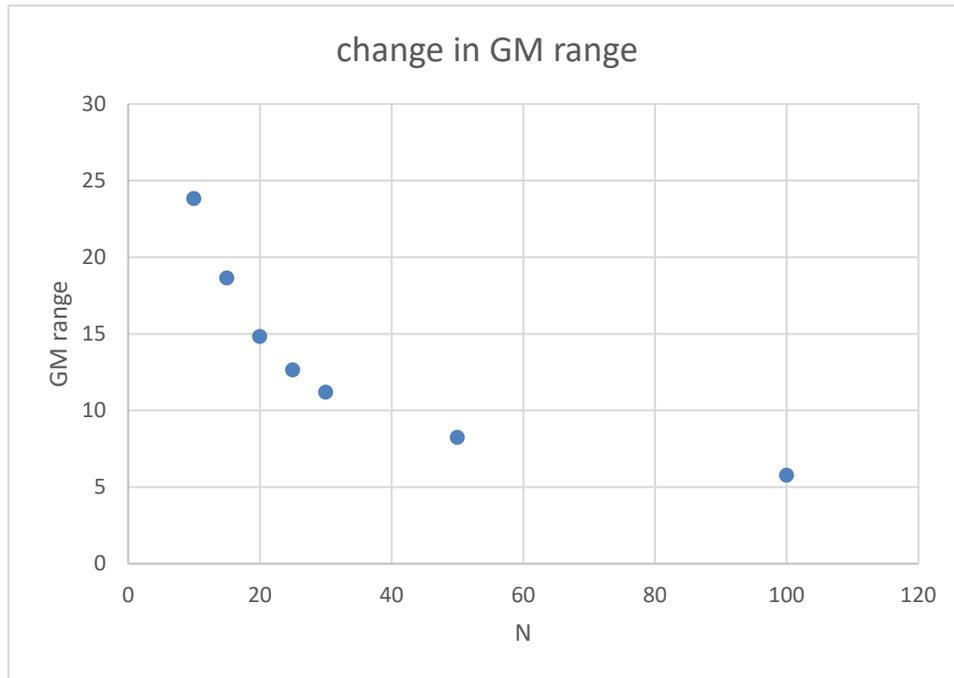
The next step in power analysis involves assessing diminishing returns in the constriction of the geomean ranges with increasing numbers of sample events. For example, whereas an increase in sample events from $N=10$ to $N=100$ would correspond with a very large constriction in the lower and upper bounds of the geomean ratio (performance) range, an increase in sample events from $N=100$ to $N=110$ would correspond with a dramatically lesser constriction.

For the TSS, Copper and Zinc data that were tested, the sweet spot for the number of water quality sample events to be collected during the upcoming Permit term is $N=30$. However, $N=25$ has a significant but relatively acceptable consequence with respect to the size of the geomean range (particularly for the TSS data from the International Stormwater BMP Database) relative to $N=30$, and therefore it has been used as a modest reduction in effort (from $N=30$ down to $N=25$) for the ACCWP, CCCWP, SCVURPPP, and SMCWPPP Permittees. Above $N=30$, successive constrictions in the geomean range suffer increasingly dramatic diminishing returns. Below $N=25$, the opposite is true because the geomean range becomes much larger, and therefore the efficacy and utility of the monitoring program drops off dramatically.

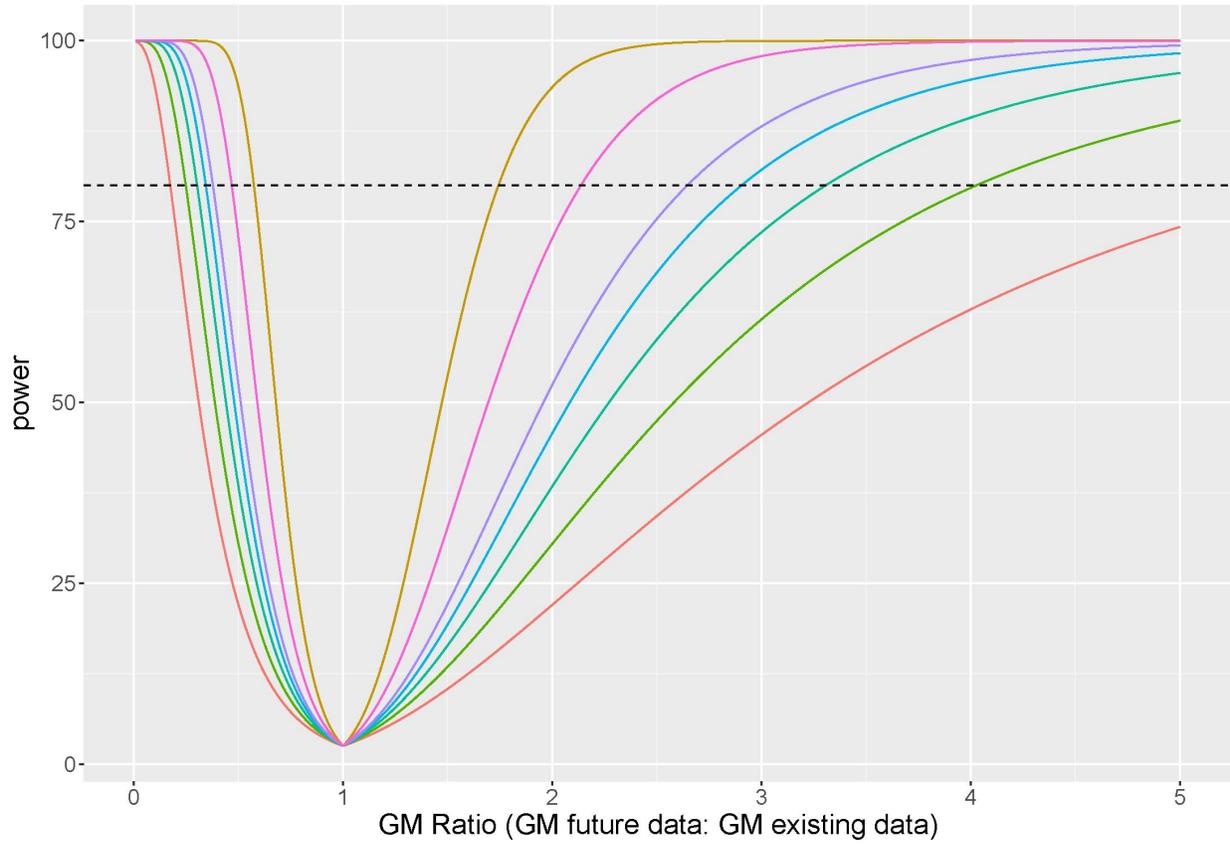
Following are the tabular data and visualizations for each of the four datasets that were produced by the power analysis. Diminishing returns can be visualized as the point at which the slope of the rate of change in geomean range (x-axis = number of sample events; y-axis = change in geomean range), starts to flatten out as it approaches a horizontal asymptote.

International Stormwater BMP Database, TSS

N	GM ratio		Future GM	
	low	high	low	high
10	0.174	5	0.858864	24.68
15	0.248	4.026	1.224128	19.87234
20	0.302	3.306	1.490672	16.31842
25	0.344	2.905	1.697984	14.33908
30	0.378	2.645	1.865808	13.05572
50	0.468	2.137	2.310048	10.54823
100	0.573	1.743	2.828328	8.603448

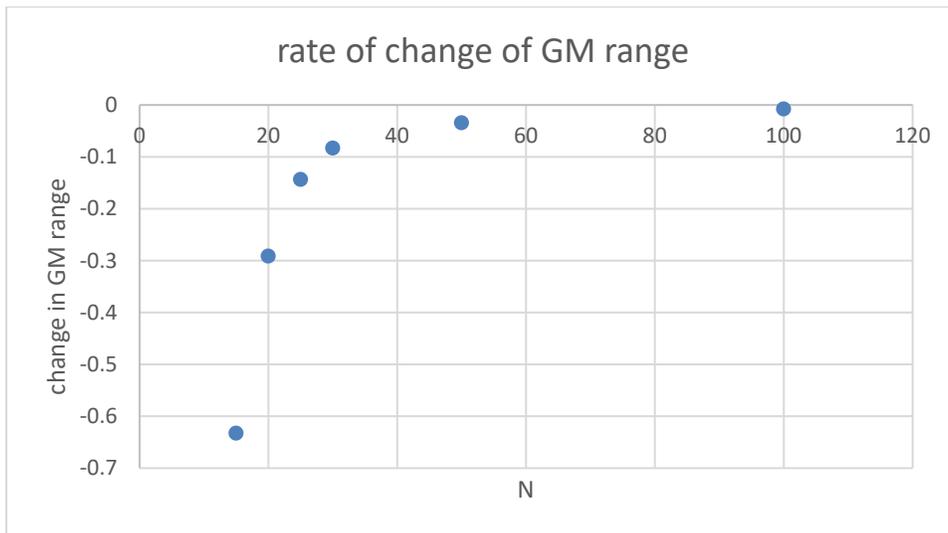
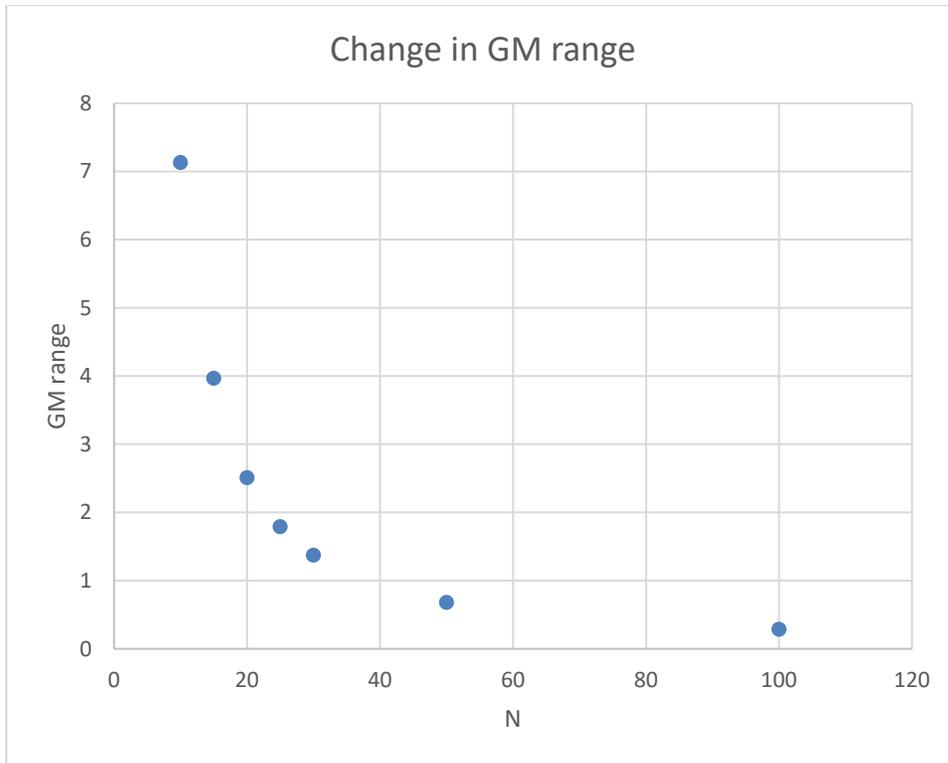


International LID TSS non-parametric power vs. GM_new/GM_orig (n_pre=537)
 Existing data mean = 22.875; Existing data geomean = 4.936

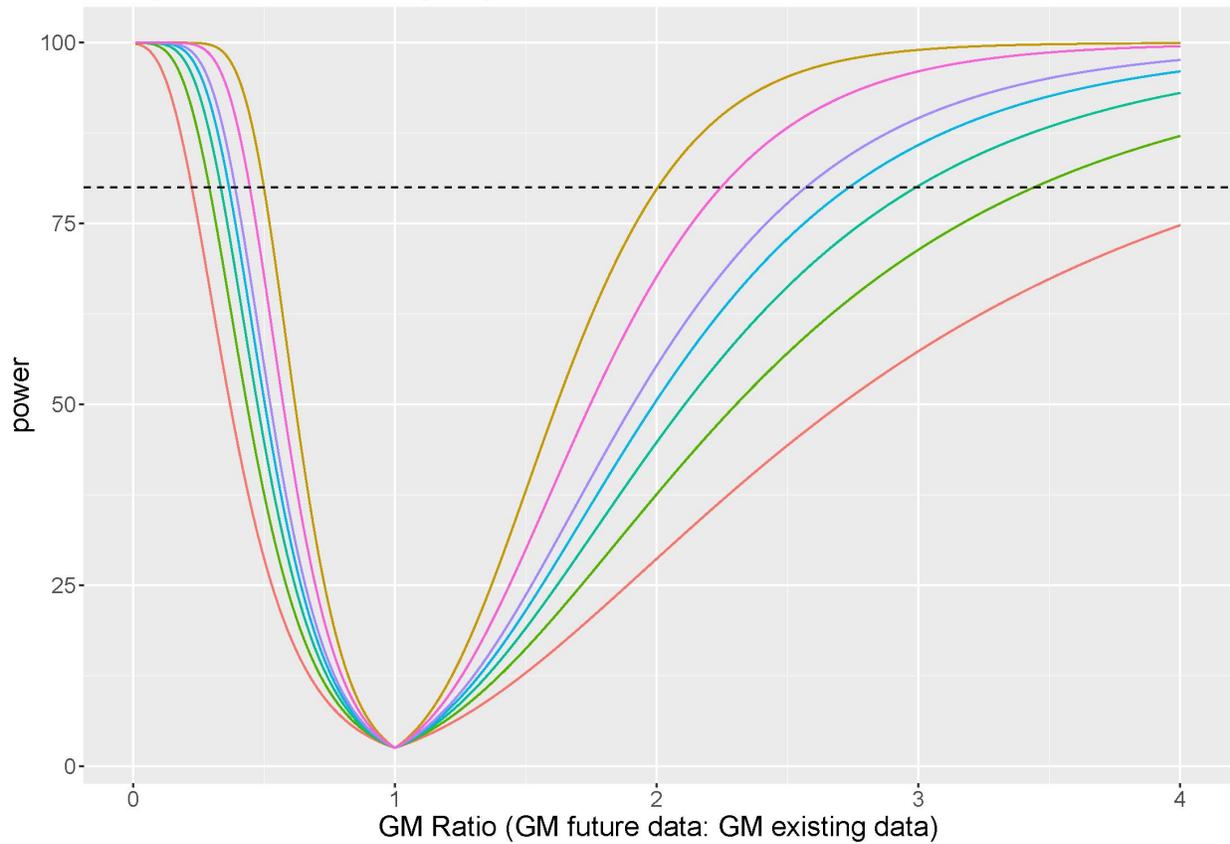


SCCWRP California BMP Effectiveness Calculator, TSS

N	GM ratio		Future GM	
	low	high	low	high
10	0.222	4	4.189584	75.488
15	0.29	3.442	5.47288	64.95742
20	0.334	2.991	6.303248	56.44615
25	0.365	2.735	6.88828	51.61492
30	0.389	2.57	7.341208	48.50104
50	0.445	2.246	8.39804	42.38651
100	0.498	2.005	9.398256	37.83836

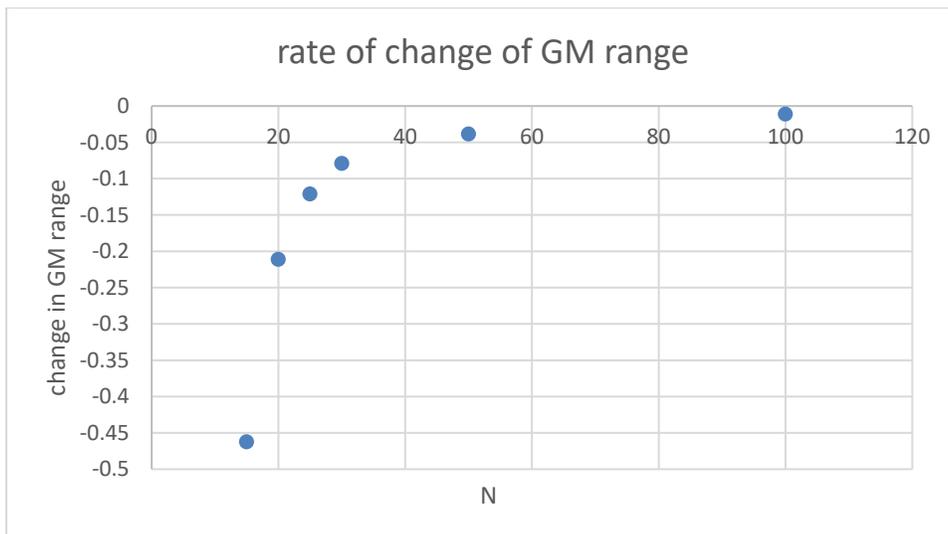
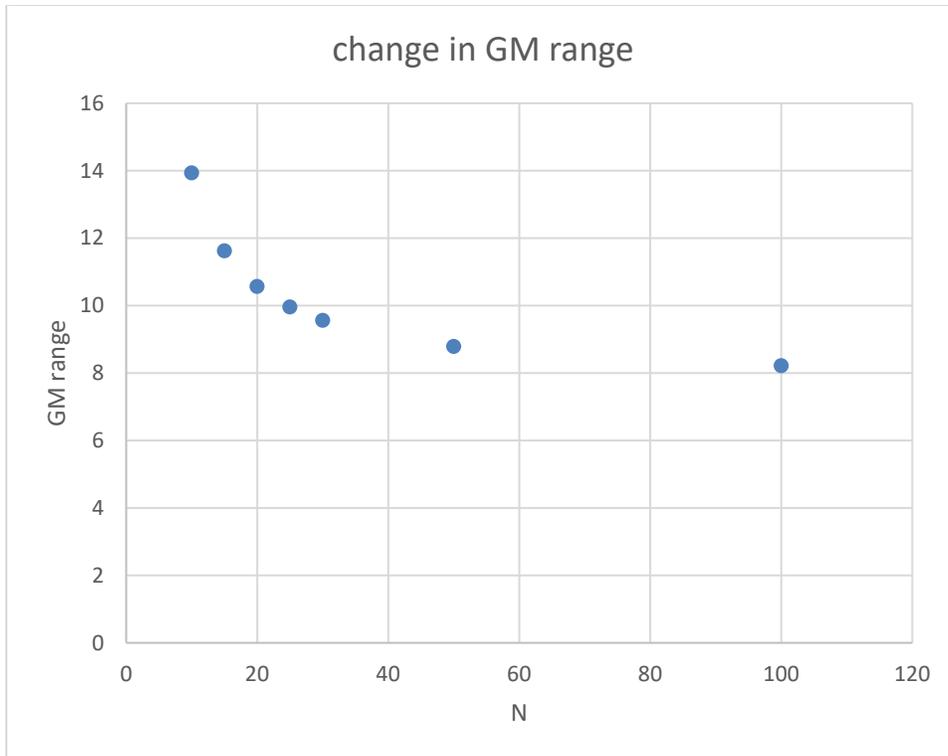


National LID TSS non-parametric power vs. GM_new/GM_orig (n_pre=50)
 Existing data mean = 52.171; Existing data geomean = 18.872

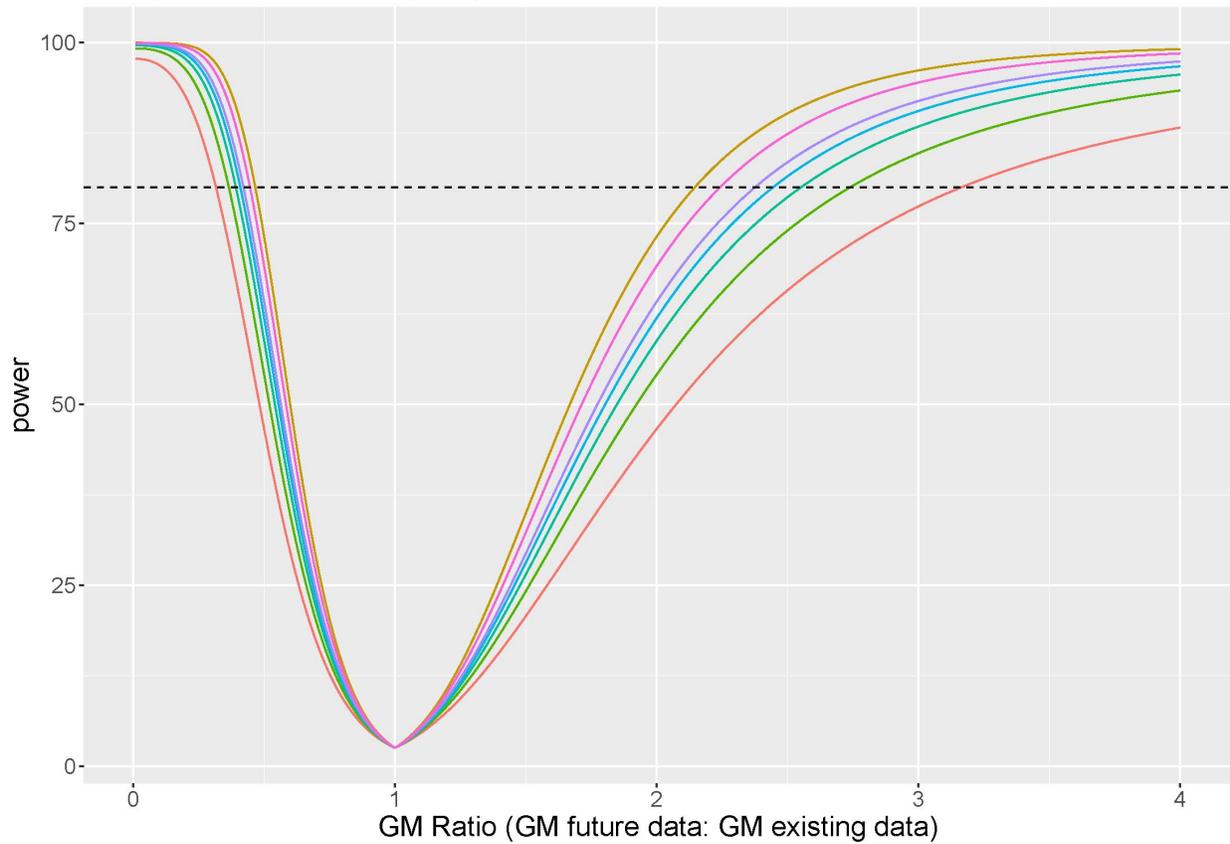


SCCWRP California BMP Effectiveness Calculator, Dissolved Zn

N	GM ratio		Future GM	
	low	high	low	high
10	0.316	3.165	1.54524	15.47685
15	0.365	2.741	1.78485	13.40349
20	0.392	2.552	1.91688	12.47928
25	0.409	2.445	2.00001	11.95605
30	0.421	2.376	2.05869	11.61864
50	0.446	2.243	2.18094	10.96827
100	0.466	2.146	2.27874	10.49394

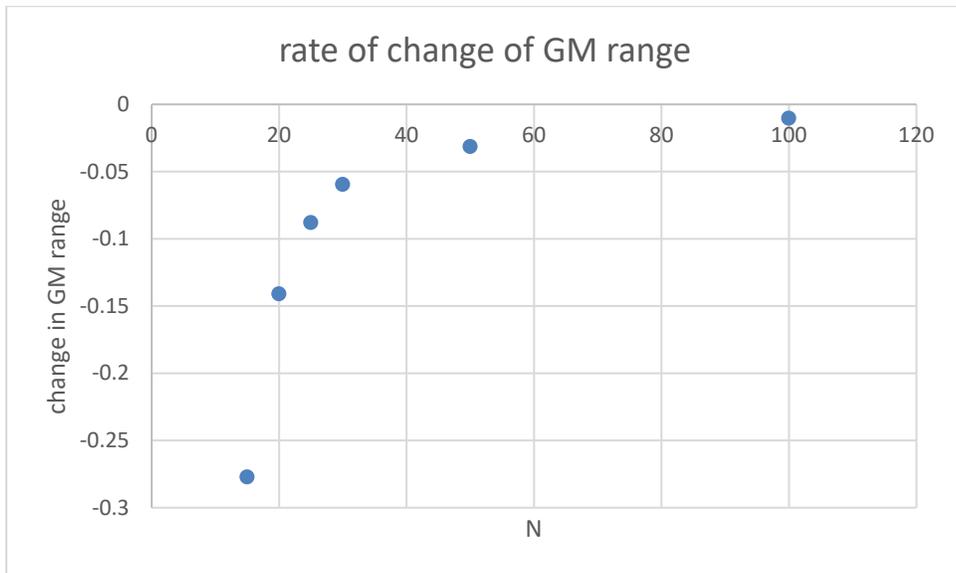
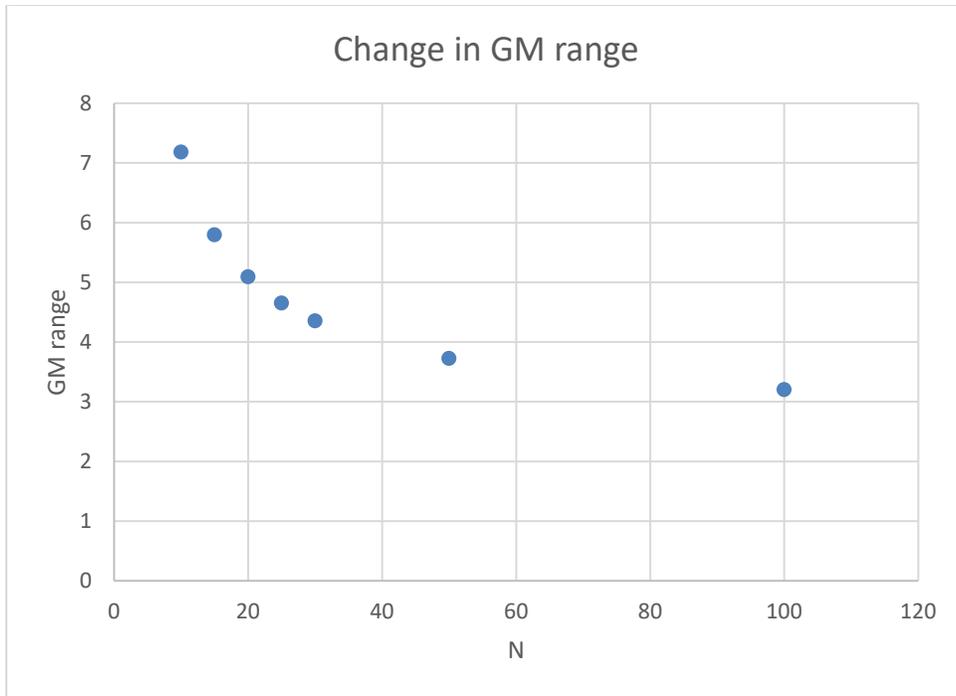


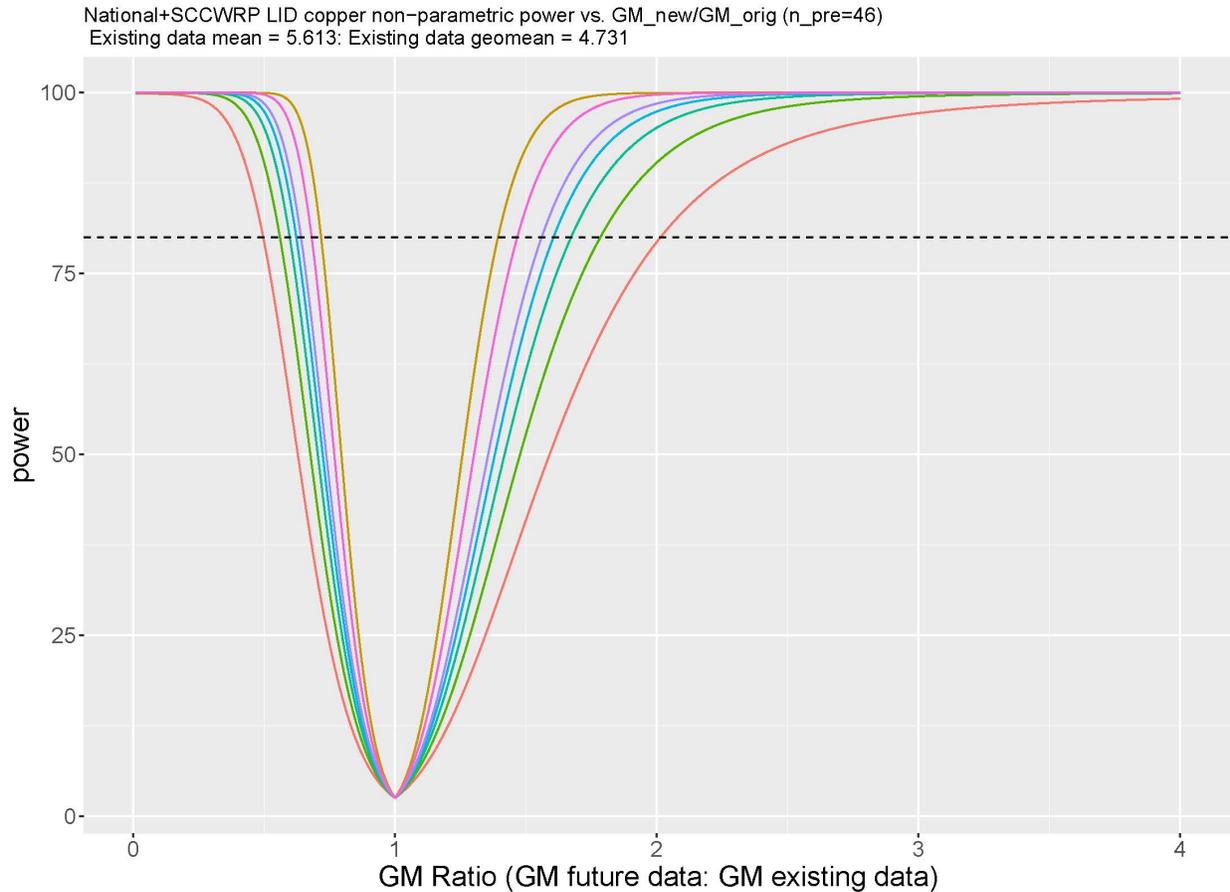
SCCWRP LID Dissolved Zinc non-parametric power vs. GM_new/GM_orig (n_pre=11)
 Existing data mean = 6.312; Existing data geomean = 4.89



International Stormwater BMP Database & SCCWRP California BMP Effectiveness Calculator, Total Copper

N	GM ratio		Future GM	
	low	high	low	high
10	0.496	2.014	2.346576	9.528234
15	0.56	1.785	2.64936	8.444835
20	0.597	1.673	2.824407	7.914963
25	0.623	1.606	2.947413	7.597986
30	0.641	1.561	3.032571	7.385091
50	0.681	1.468	3.221811	6.945108
100	0.717	1.394	3.392127	6.595014





C.8.d.v. Implementation Level requires the Permittees to begin implementing their LID Monitoring Plans by no later than October 1, 2023, which is the beginning of the 2024 Water Year, the second Water Year of the Permit term. This start date provides five months from the submittal date of the final LID Monitoring Plans (May 1, 2023) for the Water Board to approve or conditionally approve the final LID Monitoring Plans, and will allow the Permittees sufficient time after that approval or conditional approval to prepare to monitor storm events starting in the 2024 Water Year, including the first storm event of that wet season.

C.8.d.vi. Reporting requires the Permittees to submit their LID Monitoring Plans to the Water Board, subject to Executive Officer approval, by no later than May 1, 2023. This is two months after the March 1, 2023, required submittal date of the LID Monitoring Plans to the TAG, which will provide the Permittees sufficient time to make changes to their LID Monitoring Plans based on feedback from the TAG, prior to the submittal date to the Water Board. As explained for Provision C.8.d.v above, it will also provide five months for the Water Board to approve or conditionally approve the LID Monitoring Plans, and subsequently for the Permittees to incorporate any changes including in any conditional approvals, and to prepare to begin implementing their LID Monitoring Plans, prior to the October 1, 2023, LID Monitoring start date.

C.8.e. Trash Monitoring. Trash monitoring at MS4 outfalls or adjacent receiving waters provides a viable method to determine whether control actions implemented by Permittees (full trash capture systems or the implementation of other management actions equivalent to full trash capture) have been effective in preventing trash from discharging to receiving waters. Additionally, trash monitoring can be used to determine whether additional actions may be necessary and associated with sources within a Permittee's jurisdiction. Trash monitoring can also inform whether direct (non-MS4) discharges of trash are causing and/or contributing to adverse trash impacts in the receiving water(s).

The purpose of this trash monitoring is to answer the following management questions and monitoring questions:

Management Questions

- Have Permittees' trash control actions effectively prevented trash within Permittees' jurisdiction from discharging into receiving waters?
- Are discharges of trash from areas within Trash Management Areas controlled to a low trash generation level causing and/or contributing to adverse trash impacts in receiving waters?

Monitoring Questions

- What is the trash condition and approximate level of trash (volume, type, and size) within and discharging into receiving waters in areas that receive MS4 runoff controlled to a low trash generation via the installation of full trash capture devices, or the implementation of other trash management actions equivalent to full trash capture systems?
- Does the level of trash in the receiving water correlate strongly with the conditions of the tributary drainage area of the MS4?

There are currently no regulatory standard methods and protocols for monitoring trash exiting (or traveling through) MS4 outfalls/pipes or in receiving waters. However, there are numerous examples of trash capture devices attached to the end of MS4 outfall pipes, and "in-line" trash capture devices which are within the MS4 prior to discharge into a receiving water (e.g., hydrodynamic separators), and if such monitoring sites satisfy all other criteria included in Provision C.8.e (namely, that the tributary drainage areas are already controlled to the Low trash generation level), then it is reasonable that such devices can be used to monitor trash loading, simply by cleaning them out prior to the sample event, then performing a maintenance event after the sample event. For example, the vendor Stormwater Systems cites uses of such trash capture (monitoring) systems in Carrollton, Texas at Josey Ranch Lake, St. Louis, Missouri, and the Anacostia River Watershed in Maryland.²⁴² There are many other examples of

²⁴² <https://stormwatersystems.com/stormx-netting-trash-trap/>

implementation of end-of-pipe and in-line systems, such as The Sock in the City of Kwinana, south of Perth, Australia,²⁴³ the TrashTrap in Oxnard, CA, and in Narragansett Bay, RI,²⁴⁴ Los Angeles County,²⁴⁵ a large device controlling flows from a pump station prior to discharge into San Francisquito Creek and the Bay in the City of East Palo Alto,²⁴⁶ HDS units in the Cities of Livermore and Vallejo, and others. The San Francisco Estuary Partnership implemented, tested, and monitored 42 high-capacity trash control devices (both end-of-pipe and in-line) in more than 60 Bay Area municipalities, in a project that concluded in November 2013, many of which could be adapted as trash monitoring systems if they satisfy the other criteria included in Provision C.8.e.²⁴⁷ Here is a presentation that includes lessons learned for implementation in Philadelphia, PA (knowing the stormwater outfalls was an important consideration): https://delawareestuary.s3.amazonaws.com/pdf/Summit15/Balla/W-O'DayDel_Summit_Monit_Stormwater_Trash.pdf. Regarding in-stream monitoring, as discussed below, methods have been successfully piloted by 5 Gyres.²⁴⁸ Caltrans installed trash capture devices at four trash capture pilot site locations in 2018,²⁴⁹ which are examples of devices that could readily be modified and used as monitoring devices for Provision C.8.e Trash Monitoring.

In March 2017, BASMAA published a final version of a report titled “Tracking CA’s Trash: On-land Visual Assessments¹⁷” that was funded in part via a California Proposition 84 grant funded project (Agreement # 12-420-550). The primary objectives of this project were to: test trash trends monitoring methods for a) trash in lowing receiving waters and b) on-land visual trash assessments; evaluate the effectiveness and costs of trash control measures; and develop a web-based portal to disseminate related information. More recently, in December 2020, the San Francisco Estuary Institute published the “California Trash Monitoring Methods and Assessments

²⁴³ <https://www.abc.net.au/news/2019-06-09/drain-sock-kwinana-pollution-solution-takes-world-by-storm/11190266?nw=0&r=HtmlFragment>

²⁴⁴ <https://stormtrap.com/products/trashtrap/#trashtrap-Projects>

²⁴⁵

<https://www.pw.lacounty.gov/wmd/irwmp/docs/Prop%2084%20Round%202%20Implementation%20Grant%20Application/Attachment%207%20Technical%20Justification%202%20of%2015.pdf#page=97>

²⁴⁶ https://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2019/February/7b_ssr.pdf

²⁴⁷ <https://www.sfestuary.org/trashcapture/>

²⁴⁸

https://static1.squarespace.com/static/5522e85be4b0b65a7c78ac96/t/58dd932f414fb5663b5a4f79/1490916184178/TCT+Creek+Monitoring+Report_FINAL.pdf

²⁴⁹ Caltrans Site Identification Number: 4-430, Post Mile: 04-Ala-880-PM 23.73, Interchange: Davis Street, Device Type: StormTrap (FreshCreek), Construction Completion Date: 07/05/2018; Caltrans Site Identification Number: 4-431, Post Mile: 04-Ala-880-PM 16.58, Interchange: Highway 880/State Route 92, Device Type: Old Castle (KriStar), Construction Completion Date: 07/05/2018; Caltrans Site Identification Number: 4-432, Post Mile: 04-Ala-880-PM 7.37, Interchange: Mowry Avenue, Device Type: Modified Old Castle (KriStar), Construction Completion Date: 12/20/2018; Caltrans Site Identification Number: 4-433, Post Mile: 04-Ala-880-PM 6.29, Interchange: Stevenson Boulevard, Device Type: StormTrap (FreshCreek), Construction Completion Date: 12/04/2018.

Playbook.”²⁵⁰ The objective of this report was to create a foundation for developing a consistent, standardized approach to trash monitoring statewide. The project team identified four trash monitoring methods and then performed a method comparison analysis based on two seasons of fieldwork, culminating in numerous conclusions, including the following: some methods are more accurate than others, some methods are more subjective than others, some methods are more labor-intensive than others, and some methods are more expensive than others. Water Board staff have reviewed both of these reports and the information presented within them has been used towards developing the trash monitoring requirements of this Order.

Though we do not yet have evidence that those on-land methods are reliable indirect indicators of trash loading through MS4s and receiving waters, we think many of those methods are well-suited for characterizing on-land trash conditions, including on-land areas adjacent to MS4 outfalls and receiving waters. When combined with direct measurements of trash loading in MS4s and receiving waters, these on-land methods may help provide a synoptic view of trash loading within Permittees’ jurisdictions.

Factors such as feasibility, location logistics, types of trash, complexity, and costs, provide a means for Permittees to focus and limit the number of monitoring locations while still providing spatial and temporal representativeness of the impact of implemented trash controls on the receiving water.

The Trash Monitoring program to be implemented by the Permittees during this Permit term essentially constitutes a pilot project, and the Water Board may consider expanding the scope of the program in a future Permit term by increasing the number of sites and/or events.

- **C.8.e.i. Monitoring Components** calls for the Trash Monitoring program to address the specified management and monitoring questions, and to the extent possible, requests for regional consistency in methods employed to answer those management and monitoring questions. trash monitoring method components demonstrated and implemented in the Statewide Trash Monitoring Methods Project (Trash Monitoring Playbook²⁵⁰) ensure the use of comparable data for each monitoring site. These components entail six steps which include 1) event preparation; 2) gathering standard equipment; 3) setup of the assessment area; 4) recording of site information and assessment area dimensions; 5) recording assessment areas photos; and 6) determining the location of storm drain outfalls, homeless encampments, and illegal dumping hotspots that can impact the assessment area.

The establishment of a technical advisory group (TAG) that includes Water Board staff, Permittees, and impartial science advisors (e.g. SFEI, SCCWRP, etc.) is crucial in order to provide the necessary guidance needed to answer the

²⁵⁰ <https://sites.google.com/sfei.org/trash/>

management questions and to provide peer review sufficient to ensure that work is appropriately science-based.

- **C.8.e.ii. Monitoring Methods** describes the monitoring methods that may be used to address the management and monitoring questions. The methods described provide flexibility with respect to siting and methodology.
- **C.8.e.ii.(1)** calls for the direct monitoring of MS4 outfalls that drain tributary drainage areas that are controlled to the Low level, via full trash capture devices, other actions verified by on-land visual trash assessments, and any combination thereof. Several possible methods are listed.
- **C.8.e.ii.(2)** calls for direct (in-stream) monitoring of receiving waters. Several possible methods are listed. It also requests (but does not require) that such monitoring be co-located with MS4 outfall sites, which (to the extent possible and realized) would help to distinguish between background levels of trash in the receiving water and the relative contribution of trash discharging through the respective MS4 outfall. This could help answer questions such as:
 - Are discharges from MS4 service areas controlled to the Low trash generation level, nevertheless, causing or contributing to adverse impacts in receiving waters?
 - Failing an adverse impact definition, how does the loading from the MS4 outfall compare to loading present in the receiving water? Is it greater or lesser by an order of magnitude?
 - How does trash loading from the sampled MS4 outfall compare to the estimated contribution of other nearby sources of trash loading to the receiving water, such as other upstream/downstream MS4 outfalls, homeless encampments, and illegal dumping sites, relative to the background level present in the receiving water?

The answers to these questions could help inform/prioritize/trigger management actions. For example, given the loading measured in a given receiving stream, perhaps an upstream MS4 outfall is a greater priority than the sampled MS4 outfall, or vice-versa.

However, recognizing that such questions are not easily answered, that the end-of-pipe/in-line and in-stream trash monitoring methods are relatively new to the Permittees, and that it is difficult to site both MS4 outfall sites and receiving water sites (not to mention the difficulty in siting them close together), co-location is not required in this Permit term.

Permittees may use methods which only partially screen and capture the cross section of a receiving water, such as the methods piloted by 5 Gyres.²⁴⁸ This means they will need to extrapolate the sample to the remainder of the cross section.

Extrapolation may be more appropriate (/accurate) for channels experiencing supercritical flow (which are likely to have good mixing of trash because of the higher turbulence), which is more likely for a hardened channel. Conversely, the opposite is likely the case for natural channels. Natural channels are more likely to have subcritical flows (less turbulence) which means there will be less mixing of trash, more concentration of trash in the thalweg, and samples will be less easily extrapolated to the rest of the cross section.

- **C.8.e.ii.(3)** recommends, but does not require, the implementation of on-land methods coincident with MS4 outfall and receiving water sites. The purpose of this is to gain a synoptic view of on-land trash conditions adjacent to outfall and/or in-stream monitoring sites. However, recognizing the cost and level of effort associated with MS4 outfall and receiving water monitoring, this monitoring element is optional, as it is not as high of a priority as MS4 outfall and receiving water monitoring.
- **C.8.e.ii.(4)** requires that all trash monitoring sites additionally characterize flow rates and recommends methods that can be used.
- **C.8.e.ii.(5)** explains that all methods must include collection of data on material type collected, which is important for assessing the water quality impact caused by different types of trash because different kinds of trash may cause different types of impacts to aquatic life and may create different types of pollution.^{250,251} This may additionally inform the eventual definition of no adverse impact to receiving waters, as different types of trash are likely to cause different levels of impact. Data collected on material type will also inform the Permittees' implementation of source controls and other management actions for controlling trash.
- **C.8.e.iii.** describes the minimum number of sites and monitoring events that Permittees are required to sample (and analyze) on an annual basis, which will be revised based on review by the Technical Advisory Group. Although these trash monitoring methods are not new to the world, they are relatively new to the Permittees, and therefore we do not want to overtask the Permittees while they are learning and piloting these methods. However, it is reasonable that in a future Permit term, the Water Board may consider increasing the Trash Monitoring level of effort, with cause. For example, if statistical analysis (i.e. power analysis) suggests that more sites and samples are needed to be able to assess whether data from a future monitoring program (e.g., a revised Trash Monitoring Provision in MRP 4) belongs to the same distribution as the data collected during MRP 3, MRP 2, or some other dataset, then Water Board staff will make that recommendation. Towards that end,

²⁵¹ *A Rapid Trash Assessment Method Applied to Waters of the San Francisco Bay Region: Trash Measurement in Streams*. San Francisco Bay Regional Water Quality Control Board, April 2007. Accessed on September 2, 2021, from: <https://www.waterboards.ca.gov/sanfranciscobay/docs/swamptrashreport.pdf>

Water Board staff may perform power analysis during MRP 3 on the data collected by that time, to inform, support, and justify changes to Provision C.8.e for MRP 4.

- There are two required components of monitoring, MS4 outfall monitoring and (direct) in-stream monitoring. Permittees are allotted one year of planning before they must begin MS4 outfall monitoring, and two years before they must begin in-stream monitoring, to choose monitoring sites, secure permits, and practice/refine sample methodologies. It is appropriate that they are given an additional year for in-stream monitoring (relative to MS4 outfall monitoring) because that may take more time to find sites and secure permits. The number of sites is also reduced for in-stream monitoring, because it is a pilot project, and to reduce the overall level of effort for Permittees.
- There is no minimum requirement for number of sites or events for on-land monitoring, as that monitoring component is optional (though recommended).
- Pursuant to Provision C.8.e.iii.(8), Permittees are required to use the results of Trash Monitoring to inform and investigate their trash management actions. If Trash Monitoring results indicate that discharges are causing or contributing to adverse trash impacts in receiving waters, Permittees shall implement new or enhanced actions to comply with the trash discharge prohibition and receiving water limitations. For example, if the amount of trash discharged from an MS4 outfall exceeds 5 gallons/acre/year, then that should trigger an investigation into why trash loading from that MS4 outfall is greater than expected (based on trash generation rates and controls present in the tributary drainage area), be it inadequate/poor O&M, design, and/or construction of FTCDs, short-circuiting of trash controls, or a number of other potential causes/contributors. Other examples of what might trigger Permittee investigations include the discharge of trash items that should be prohibited by credited source control ordinances, and the discharge of trash items greater than 5mm (e.g., cigarette butts) during storm events which are less than or equal to the design storm (i.e., when bypass should not be occurring). Provision C.8.e.iv.(2)(f) requires the Permittees to solicit feedback from the TAG on the implementation of Provision C.8.e.iii.(8), Provision C.8.e.v.(6) requires the Permittees to discuss in the Trash Monitoring Plan their plans for implementation of Provision C.8.e.iii.(8), and Provision C.8.h.iii.(2)(h) requires the Permittees to report on implementation of Provision C.8.e.iii.(8).
- **C.8.e.iv.** calls for formation of a Technical Advisory Group (TAG), which includes impartial science advisors (e.g., SFEI, SCCWRP, etc.) and Water Board staff, to review and provide input, feedback, and recommendations on Trash Monitoring, including site selection, methods and analyses, results, and conclusions. The TAG is also critical to determining the adequacy of the methods and minimum storm size, number of sites, events, frequencies, and intervals, and recommendations for alternatives, to answer the management and monitoring questions.

The TAG is required to meet biannually during the development of the Trash Monitoring Plan, to aid in its development. Subsequently, the TAG is required to meet at a minimum annually, which is sufficient for the TAG to – on an ongoing basis – review and provide feedback on the Permittees’ implementation of Provision C.8.e. However, the TAG should meet more frequently as needed, especially during the beginning of the Permit term when the Permittees’ implementation of the Trash Monitoring program is being carried out for the first time.

Among the tasks assigned to the TAG is to discuss the timing of sampling during storm events; a recent publication by the 5 Gyres Institute recommends that sampling is prioritized during the rising limb of the hydrograph, as that is when most of the trash load is mobilized through the MS4 system.²⁴⁸ Another task is discussion of permitting, which is intended to help the Permittees secure permits; the TAG can strategize how best to secure permits, and can even invite participation and input from permitting agencies such as CDFW and the Corps.

- **C.8.e.v.** calls for the development and submittal of a Trash Monitoring Plan prior to the inception of trash monitoring.

The Trash Monitoring Plan includes a requirement that the Permittees submit a monitoring schedule that includes the timing, number, and type of monitoring events at each site. Timing encompasses, but is not limited to, decisions such as at which point in the water year that storms are sampled (e.g., whether near in the beginning, middle, or end of a given water year), the time during individual storms that samples are taken (e.g., during the rising limb of the hydrograph, the peak of the hydrograph, or the falling limb of the hydrograph, which decision is influenced by factors such as the delineation of the tributary drainage area to the MS4 outfall and the time of concentration), and consideration of antecedent dry periods (trash accumulation) and timing of sampling relative to cleanup activities in the assessment area and/or in the tributary drainage area to the MS4 outfall.

C.8.f. Pollutants of Concern²⁵² Monitoring. Provision C.8.f. requires monitoring for the following select pollutants of concern (POC): PCBs, mercury, copper, zinc, fecal indicator bacteria and certain emerging contaminants. The emerging contaminants to be monitored have been characterized as moderate concern for the Bay (SF Bay occurrence data suggest a high probability of a low-level effect on wildlife) and are likely transported in stormwater. The monitoring requirements for these emerging contaminants will support RMP efforts to better characterize concentrations in stormwater. The PCBs and mercury TMDLs require monitoring to measure loads reduced and the progress the water body is making toward attaining water quality objectives. The Basin Plan requires Permittees to monitor copper loading to the Bay to track loading. Provision C.8.f. monitoring is intended to assess inputs of select POCs to the Bay from local tributaries and urban runoff; provide information to support

²⁵² See sections C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

implementation of TMDLs and other pollutant control strategies; assess progress toward achieving wasteload allocations (WLAs) for TMDLs; assess compliance with receiving water limitations (RWLs), and help resolve uncertainties in loading estimates and impairments associated with these pollutants.

In particular, POC monitoring addresses six priority POC management information needs:

- (1) Source Identification - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
- (2) Contributions to Bay Impairment - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
- (3) Management Action Effectiveness - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;
- (4) Loads and Status/Trends - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and
- (5) Status/Trends - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.
- (6) Compliance with Receiving Water Limitations – providing information to assess whether receiving water limitations (RWLs) are achieved.

The Permit specifies monitoring methods that can be used to address these information needs and which information needs apply to each pollutant of concern. The Permit provides flexibility in the number of samples, or level of effort, but requires minimums to be met annually and over the Permit term. The level of effort (expressed as required number of samples collected and analyzed) is identical to the manner in which the level of sampling and analysis effort for pollutants of concern monitoring was specified in the Previous Permit.

The approach for POC monitoring does not pre-determine specific monitoring locations. Rather, the Permit requires that monitoring be intelligently and flexibly directed toward answering the management information needs (that apply to a given pollutant), and this flexibility allows the monitoring strategy to be adapted and improved based on information obtained from monitoring conducted early in the Permit term. The flexibility also allows the Permittees to continue collecting useful information even during drought years in which conditions limit some types of data collection (e.g., storm event sampling) but not others (e.g., collection of bed sediment). In fact, bed sediment data collected at all times of the year offers a valuable and efficient means of locating source areas and characterizing contamination in watersheds. During storm events of sufficient

intensity, the pollutants attached to sediment are mobilized and transported from source areas, but some of this contaminated sediment is often deposited near the source area so there is a “fingerprint” of the source that can be detected through sampling this bed sediment.

It is impractical to sample all of the urban runoff outfalls in the region. Monitoring at outfalls can provide valuable information and be an important component of an overall pollutants of concern monitoring strategy. For example, strategic outfall sampling for pollutants of concern is necessary to identify source areas and contaminated portions of watersheds near the outfalls (to support control measure implementation). However, these outfall data (obtained at great expense) cannot address all management information needs for pollutants of concern. By strategically sampling the sediment and water column, the Permittees can better address the six information needs stated above.

There are two components that address assessing compliance with RWLs (sixth management information need). First, Provision C.8.e requires receiving water monitoring in the San Francisco Estuary, which is conducted through the RMP. The RMP monitoring provides a comprehensive assessment of water quality in the estuary. San Francisco Bay is the ultimate receiving water for the tributaries in the region. The contaminant concentrations in Bay water, sediment and biota thus represent an integration of all the sources of contaminants (e.g., urban runoff, atmospheric deposition, wastewater treatment). Comparison of RMP data to water quality objectives allows water quality managers to determine if RWLs are achieved in the ultimate receiving water, San Francisco Bay. The RMP monitoring in San Francisco Bay includes both wet season and dry season data collection in water, sediment, fish, shellfish, and birds. The suite of analytes monitored in these media adaptively change over time in response to available information about evolving water quality threats. For example, initial RMP efforts in the early 1990s focused on metals contamination. Improvements in wastewater treatment and banning lead from gasoline led to sharp declines in Bay metals concentrations. Accordingly, the RMP adapted to focus more attention on mercury, PCBs, organic contaminants and, today, a wide range of emerging contaminants. However, the program continues to monitor for many metals to maintain appropriate surveillance and monitor for trends. Thus, the RMP provides valuable information on a large number of pollutants that can be used to assess compliance with RWLs at the level of San Francisco Bay.

The second component of RWL monitoring is required through Provision C.8.f and C.8.h.iv and is focused on tributaries to the Bay, which are directly influenced by discharges from MS4s. This monitoring will consist of sampling during the wet season (primarily) and dry season to generate water quality data to assess compliance with RWLs. Because it is not possible to sample all waterbodies in the region, waterbodies will be selected to be representative of the range of waterbody types in the region. It is also not possible to collect data at all times and locations in a waterbody so sampling

locations in this subset of waterbodies will be selected to obtain water quality data spatially and temporally representative of the water bodies being sampled.

It is also not possible to sample for every one of the thousands of possible analytes. It would be an expensive and even impossible undertaking to monitor for all possible analytes, and not a good use of resources. Monitoring should be focused on those pollutants for which there is a reasonable risk of an exceedance of applicable water quality objectives and for which stormwater discharges cause or contribute to such exceedances. Table 8.2 in Provision C.8.f contains a list of candidate pollutants to monitor, but the Water Board, at present, lacks reliable and comprehensive information to determine the suite of analytes for tributary-focused monitoring to assess RWLs. Accordingly, the waterbodies to sample, the locations in those waterbodies, and the full list of analytes to quantify will be specifically determined, based on criteria set forth in the permit, through a report required by Provision C.8.h.iv(2).a due no later than March 31, 2023. Requiring focused pollutant monitoring based on water quality impacts is consistent with the monitoring approach used in NPDES permits for wastewater. The report required under Provision C.8.h.iv(2).a requires Permittees to use existing information to identify the suite of analytes that have the potential to exceed water quality objectives. Sources of information relevant for identifying candidate analytes include RMP data, monitoring data collected in Bay Area tributaries through the MRP and other programs. If local RMP or tributary monitoring data are not available, Permittees should review monitoring data collected in tributaries in other urban areas as well as relevant information from the literature. Once the report is approved by the Executive Officer for compliance with the requirement and technical adequacy, Permittees will then execute the monitoring specified in the report for the representative waterbodies in a manner to collect temporally and spatially representative data and report these data under Provision C.8.h(ii) (Electronic Reporting) and in the Integrated Monitoring Report required by Provision C.8.h.v.

Pollutants of concern broadly, and PCBs and mercury in particular, present special challenges for the design of an effective management strategy because they are widely distributed in the urban landscape, and they are transported to receiving waters on sediment particles mobilized from watersheds during intermittent precipitation events. These challenges led to the identification of the first five of six broad management information needs mentioned above that could be addressed through monitoring, and monitoring data can certainly provide useful information to address these questions. However, it is also important to be aware of the limitations of monitoring data in addressing all management information needs, especially with respect to pollutants like PCBs and mercury. Mercury is distributed widely throughout the urban landscape through a combination of presence in consumer products (lightbulbs and thermometers) and also because it can be deposited from the atmosphere. Therefore, although one does occasionally find elevated concentrations in some locations, one generally finds moderately elevated concentrations spread over a wide geographic area. PCBs are distributed somewhat differently because they were used in industrial activity so one

finds high concentrations associated with historical land uses (generally old industrial) where PCBs were used intensively.²⁸⁴

Despite the differences in their distribution and chemical properties, both PCBs and mercury tend to be associated with sediment particles (slightly more so for PCBs).²⁵³ This means that these contaminants are transported through watersheds to receiving waters attached to sediment particles during precipitation events. However, contaminant transport is a very complicated and highly variable process that depends on the features of the source area, the slope of the watershed where the contamination exists, the soil and other land use features, the intensity of the rainfall event, antecedent soil moisture conditions, and other factors.²⁵³

For pollutants like methyl mercury that are transported in the aqueous phase (not attached to particles) and whose aqueous concentrations do not vary substantially across monitoring events during a monitoring season, one can generate reasonable load estimates using a simple method of multiplying runoff volume by the average of the measured aqueous pollutant concentrations. This method requires the average of the concentrations to represent reasonably well the typical pollutant concentration in the flowing stormwater. However, for particle-bound pollutants that have more complex source release and transport processes, more intensive monitoring strategies making use of continuous monitoring of turbidity in conjunction with grab samples (during storm events of sufficient size to mobilize sediment particles containing PCBs and mercury) of suspended sediment along with contaminant concentrations must be employed to accurately measure the amount of PCBs or mercury moving past some monitoring location in a receiving water during a particular time period (e.g., during the months of a single wet season).²⁵⁴ This intensive method of generating load estimates from continuous turbidity and grab sampled concentrations is called the turbidity surrogate method because the continuously-measured turbidity serves as a surrogate for suspended sediment concentrations established through regression relationships with measured suspended sediment collected via grab samples during storms.²⁵⁴ The Bay Area climate is among the most variable of any in the world so the pattern and amounts of rainfall vary substantially from year-to-year because of this variability. Therefore, in order to obtain an estimate of the typical load through monitoring, this intensive continuous monitoring activity would need to be employed over several years.

This measurement difficulty also applies to the scale of an individual control measure or a single watershed where control measures are implemented. For example, if a control measure were put in place to address PCBs or mercury loads in a single watershed,

²⁵³ McKee, Lester; Leatherbarrow, Jon; Pearce, Sarah; Davis, Jay (2003) *A Review of Urban Runoff Processes in the Bay Area – Existing Knowledge, Conceptual Models, and Monitoring Recommendations*. San Francisco Estuary Institute Contribution 66.

²⁵⁴ McKee, Lester et al. (2017). *Long-term variation in concentrations and mass loads in a semi-arid watershed influenced by historic mercury mining and urban pollutant sources*. *Science of the Total Environment* Volumes 605-606, pages 482-497.

some portion of the PCBs or mercury load from that site may be reduced. However, there could be other pollutant sources in the watershed and the pollutants from the controlled source may already be distributed somewhat through the watershed awaiting transport to the receiving water. In any case, the actual load reduction effect from any one or group of control measures is likely to be small and the impact on downstream loads would take time to manifest as the residual contamination was transported through the watershed. Individual control measures likely result in small incremental changes in loads.

In order to detect (through monitoring) these small load reductions in a watershed where control measures are implemented, one should attempt to measure all of the pollutant load flowing out of the watershed. This is practically impossible. Instead, the same intensive monitoring procedure (turbidity surrogate method) described above should be employed for several years after implementation in order to attempt to capture enough storm events over several years to account for the climatic variability. This intensive monitoring procedure can provide a reasonable estimate (with moderate uncertainty) for the amount of sediment moving past the monitoring location through use of continuous turbidity monitoring and establishing the relationship with suspended sediment.²⁵⁴ The PCBs and mercury concentrations, by contrast, are measured through grab samples during storms for which field crews can be mobilized. It is impossible to mobilize field crews for *all* storms in a single watershed, much less for every storm in every watershed (there are potentially hundreds) where control measures may be implemented. These pollutant concentrations from individual storms are used to develop estimates for the pollutant concentrations (attached to sediment particles since these pollutants move with sediment) for the storms that are not measured. Finally, the estimated PCBs or mercury sediment concentrations (from the grab sample data) are multiplied by the estimate of the suspended sediment (from continuous turbidity versus suspended sediment regressions) to arrive at an estimate for the total mass load of mercury or PCBs that flowed past the site during the storm season.

Because of the way the pollutant concentrations are estimated based on the data collected from a few storms, the calculated mass load has moderate to considerable uncertainty for that storm season. The scale of the uncertainty is likely greater than the scale of the load reduction resulting from any single control action, even if the load reduction occurred immediately upon implementation (which is unlikely because of how pollutants are distributed and transported in watersheds). What is worse, the actual loads can vary from year to year by at least a factor of ten and often more. Therefore, if one wanted to be sure to assess the load reduction effects of control measures through monitoring, one would need to carry out this turbidity surrogate method over several years to arrive at a long-term average mass load. This amount of effort would be needed just to measure the impacts of control measures in a single watershed. There are hundreds of watersheds in the Bay Area where control measures may be implemented. Implementing the turbidity surrogate method on even a single watershed is not a practical means of assessing the impact of control measures on loads. An

intensive program of continuous monitoring at hundreds of locations upstream and downstream of control measure implementation over several years would be required to correctly measure PCBs and mercury loads. The effort and expense to undertake such a monitoring program would consume all or nearly all available resources that would be better spent on control measure implementation.

Using watershed models to estimate loads and changes in loads offers an alternative, practical approach instead of trying to assess loads through monitoring alone. The general idea is that the watershed model simulates sediment and water movement through watersheds in order to estimate sediment and pollutant mass loading at times and places where data are not available because the model is calibrated against available monitoring data from the turbidity surrogate method and also pollutant concentrations measured from grab samples in multiple watersheds during storm events. The models can therefore predict water, sediment, and contaminant transport to estimate PCBs and mercury loads and changes in loads due to management intervention and land use changes over time. The modeled estimates have uncertainty associated with them so they would also not be able to reliably demonstrate small changes in loading. Because the models are using data collected over several watersheds (over the entire Bay Area) collected over several years, they generally perform better in predicting loads at larger spatial scales. In order to understand why, consider the case of modeling the load for a single watershed. The modeled load estimate for a small watershed area would be highly uncertain because the monitoring data used to calibrate the model may not be available for that watershed. In other words, monitoring data from the entire Bay Area is being used for model calibration, and these data may not be applicable for any single watershed. At the aggregated level of multiple watersheds or the entire Bay Area, these uncertainties (a set of over predictions and under predictions of watershed loads compared to monitoring data) tend to cancel out so the aggregated load estimate from the model at the regional scale is usually more certain than the estimate for any single watershed.

The problems associated with climate variability impacting load variability cannot be entirely avoided by using models, but the models can be used to simulate loading over multiple years to generate an average load over several years where rainfall amounts (and hence loads) may have varied. In this way, the models can smooth out climate variability and generate something like an average loading. The models ultimately rely on monitoring data for their calibration and validation, however. If actual loading changes have not manifested in monitoring data, then the models will not show loading changes either. Because control measures for PCBs and mercury, even if effective, result in relatively small loading changes during any particular year or even five-year period (e.g., about 1.6 kg/yr estimated PCBs load reduction during this permit term), the monitoring data on which the models rely are highly unlikely to detect the impact of these load reduction changes in measured concentrations. Therefore, modeled loading estimates are not likely to be sensitive enough to confirm this level of change. The models will be more useful with longer time scales such that enough land use change

and concentration change has occurred such that model can detect the change. In other words, the model works best at large spatial and temporal scales.

Both the mercury and PCBs TMDLs anticipated the challenges associated with using either monitoring alone or a combination of modeling and monitoring to assess how loading responds to control measure implementation. The mercury TMDL requires that Permittees “*develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts*”, and the PCBs TMDL requires stormwater Permittees “*to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions.*”

Consistent with these TMDL requirements and in recognition of the difficulty of assessing control measure loading changes through monitoring or modeling, the Permit employs an accountability strategy known as the programmatic approach to confirm the sufficiency of control measure implementation and provide estimates of the load reductions likely occurring as a result of these control measures. This accountability strategy is described later in this Fact Sheet.

Provisions C.8.g. Pesticides and Toxicity Monitoring. Toxicity testing provides a tool for assessing toxic effects (acute and chronic) of all the chemicals in samples of stormwater, receiving waters or sediments and allows the cumulative effect of the pollutants present in the sample to be evaluated, rather than the toxic responses to individual chemicals. Toxicity in water and on sediment also are monitored in order to determine whether the numeric targets of the Diazinon and Pesticide-Related Toxicity in Urban Creeks TMDL are being achieved, and to help provide evidence on whether pesticide-related toxicity is decreasing in urban creek waters.

This subprovision combines all the pesticide and toxicity into one place. This format is intended to provide for more thoughtful dry weather and wet weather sampling designs that may provide more meaningful data for the region and potentially for statewide studies. Since the Urban Creeks TMDL was adopted by the Water Board in 2005, it has become more apparent that pesticide related toxicity water quality problems are similar in urban waterways across the State. At this time, efforts have begun to develop a statewide coordinated pesticides and pesticide-related toxicity monitoring program. In addition, pesticide-related water quality issues are subject to change as different pesticide products gain market share and increase in urban usage. For these reasons, Permittees may request the Water Board modify, reduce or eliminate the requirements of this subprovision during the Permit term, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

This Permit describes type, interval and frequency of pesticides and toxicity monitoring sufficient to yield data which are representative of both dry weather and wet weather urban runoff. Required analytes include toxicity and pesticides that are being found at or near concentrations that cause chronic or acute effects to aquatic organisms. Required

test methods include the relatively recent Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136) for chronic toxicity. The test species are selected as the most sensitive species to pollutants currently known or suspected to be present in stormwater discharges. All required methods and test species are consistent with those used by SWAMP as well as those required in other California MS4 permits, including the statewide Caltrans permit.

The non-pesticide pollutants arsenic, cadmium, chromium, copper, lead, nickel, and zinc are included in this subprovision in order to facilitate the synoptic collection of these pollutants in sediment with toxicity in sediment during the dry season.

C.8.h. Reporting. Provision C.8.h. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements; (2) provide information useful in evaluating compliance with all Permit requirements; (3) enhance public awareness of the water quality in local streams and the Bay; and (4) standardize reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.14, C.18, C.19. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.14, C.18, and C.19.c-f pertain to pollutants of concern, including those for which TMDLs have been adopted.

Legal Authority

The following legal authority applies to provisions C.9 through C.14, C.18, and C.19.c-f:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13383, and Federal NPDES regulations 40 CFR § 122.26(d)(2)(i)(A, B, C, E, and F) and 40 CFR § 122.26(d)(2)(iv).

Specific Legal Authority: The TMDL-based requirements for pesticides, mercury, methylmercury, PCBs, bacteria, and sediment (in the Pescadero-Butano watershed only) have been imposed in accordance with 40 CFR 122.44(d)(1)(vii)(B), which requires the effluent limitations in NPDES permits to be consistent with the assumptions and requirements of any available waste load allocation (WLA) for the discharge. Water Code section 13263, subdivision (a), requires that waste discharge requirements implement any relevant water quality control plans (basin plans), including TMDL requirements that have been incorporated into the basin plans. In addition, under CWA section 402(p)(3)(B)(iii), MS4 discharges “shall require controls to reduce the discharge of pollutants to the maximum extent practicable . . . and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants” (33 U.S.C. § 1342(p)(3)(B)(iii)). Under this provision, the Water Board may include requirements for reducing pollutants in stormwater discharges as necessary for compliance with water quality standards (See *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.). This includes requirements to meet TMDLs since TMDL targets are an interpretation of water quality standards.

The Water Board may impose WQBELs that are BMPs or numeric effluent limitations (see, e.g., 40 CFR. §122.44(k)(2) and (3)). This is consistent with U.S. EPA’s November 26, 2014, “Revision to the November 22, 2002, Memorandum ‘Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs’” (2014 U.S. EPA Memo.). This memorandum, while not binding authority, states “[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA.” The 2014 U.S. EPA Memo further acknowledges that the permitting authority should consider the schedules in the TMDL as it decides whether and how to establish enforceable interim requirement and interim dates in the permit. The interim deadlines in the Provisions are consistent with and in furtherance of the deadlines in the TMDLs.

The Trash Amendments updated the Ocean Plan and the Inland Surface Waters and Enclosed Bays and Estuaries Plan to include a narrative water quality objective for trash, a trash prohibition, and a framework for implementation of the water quality objective and prohibition in municipal stormwater permits. This framework sets up two tracks for permittees to implement the prohibition; the San Francisco Bay Region Permittees are in Track 2, which means that they implement the prohibition through a combination of full-trash capture devices and other control measures deemed equivalent to full-trash capture.

For copper, the Permit requires best management practices and copper control measures to prevent urban runoff discharges from causing or contributing to exceedances of copper site-specific water quality objectives for the Bay, consistent with the Basin Plan. Water Code section 13263 requires that waste discharge requirements implement the Basin Plan.

Basin Plan Requirements:

Section 4.8 of the Region's Water Quality Control Plan (Basin Plan) states that NPDES stormwater permits issued to municipalities will include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. The Water Board has been taking a phased approach of first requiring technically and economically feasible controls to reduce pollutant discharges to the maximum extent practicable. Where this does not result in attainment of water quality objectives, the Basin Plan states the Water Board will require implementation of additional control measures to meet water quality objectives. The Basin Plan also contains urban stormwater TMDL implementation requirements at sections 7.1.1, 7.2.2, 7.7.1, 7.2.3, 7.4.1, and 7.4.2 for pesticide-related toxicity, mercury, PCBs, bacteria, and sediment. The Basin Plan also requires urban stormwater requirements for copper in section 7.2.1. The Basin Plan Table 4-1 includes Prohibition 7, which prohibits the discharge of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas." The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins also contain requirements related to pesticides and methylmercury relevant to Permittees in eastern Contra Costa County.

General Strategy for Sediment-Bound Pollutants (Mercury and PCBs):

The control measures for mercury and PCBs are intended to implement the urban runoff requirements stemming from TMDLs for these pollutants. The control measures required for PCBs are intended to implement those that are consistent with control measures in the PCBs TMDL implementation plan. The urban runoff management requirements in the PCBs TMDL implementation plan call for permit-term requirements based on an implementation of controls to reduce PCBs, and that is the intended approach of the required provisions for all pollutants of concern. Control actions addressing PCBs and mercury are expected to reduce loadings of other sediment-

bound pollutants, including legacy pesticides and PBDEs. Permittees can achieve multiple water quality benefits by strategically siting PCB and mercury controls. The POC strategy also includes a phased approach that provides for pilot scale testing (in MRP 1) and for identifying areas with pollutants of concern other than PCBs and mercury. The overall strategy for addressing sediment bound POCs uses the following framework, which is to implement controls more widely as Permittees test measures and gain confidence in their efficacy:

- (1) Pilot-testing in a few specific locations.
- (2) Focused implementation in areas where benefits are most likely to accrue.
- (3) Full-scale implementation throughout the region.
- (4) Additional Work. Permittees may also try out experimental control measures and devote resources to research and development, desktop analysis, laboratory studies, and/or literature review.

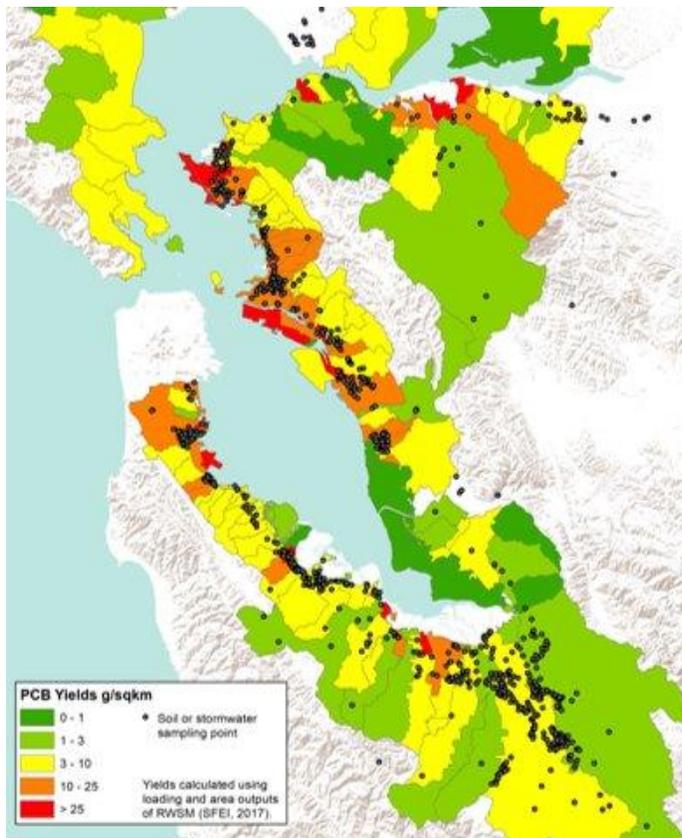
The logic of such categorization is that, as actions are tested and confidence is gained regarding the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during a permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. Conversely, the benefits of other control measures may be well known, and these control measures should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering additional information about effectiveness and cost, we will advance our understanding and be able to perform an updated assessment of the suite of actions.

During the MRP 1 permit term, Permittees focused on gathering necessary information about control measure effectiveness. In effect, most of the control measures were implemented at the pilot scale. During the MRP 2 term, the emphasis shifted toward focused and some full-scale implementation of the most effective control measures, and progress was measured through accounting for specific load reductions. In this Permit term, the mercury and PCBs provisions require specific programmatic control measures deemed effective based on implementation experience and analyses in previous Permit terms (a "programmatic approach").

Experience implementing PCBs and mercury control measures in the first two versions of the MRP along with monitoring data and other information, including modeling, informs the design of the programmatic approach. Permittees use a load reduction accounting system (see Provisions C.11.a and C.12.a) to estimate mercury and PCBs load reductions for each type of programmatic control measure consistent with an expected level of control measure implementation intensity. Permittees are required to

track and report on their level of implementation through enforceable control measure-specific performance metrics that are associated with the estimated load reductions. In subsequent permit terms, control measures will be implemented based on what is learned in this term, resulting in even more refined, improved, and effective controls.

Fact Sheet section C.8.f, above, describes the challenge of measuring (through monitoring) PCBs and mercury loads and load reductions due to how these pollutants are distributed in watersheds and transported during storm events and the variability of the Bay Area's climate. These challenges in measuring load reductions through monitoring data also necessitate a programmatic approach to control measure implementation. Over the past two decades, however, Water Board staff has compiled and analyzed a large quantity of monitoring data and other information to understand the relationship between control measure implementation and load reductions and thereby establish a solid technical foundation for the programmatic approach.



PCBs and mercury data in bedded sediment (i.e., in storm drains or street sediment) and flowing stormwater have been collected through the RMP and also by the stormwater programs over the last two decades. Through the RMP and Permittee sampling, over 100 Bay Area watersheds have been sampled. In these watersheds, over 1,500 sediment samples have been taken, and samples have been taken at over 140 locations for flowing stormwater (see dots on figure, personal communication Alicia Gilbreath, San Francisco Estuary Institute). These monitoring data provide a clear picture about how PCBs and mercury are distributed in Bay Area watersheds and what type of watersheds contribute more or less pollutant load. Notice in the figure

that the highest PCBs-yielding watersheds (mass loading of PCBs per unit area) are concentrated largely along the shore of San Francisco Bay. These high yielding watersheds are generally old industrial areas. These yields were estimated through models calibrated and validated with the monitoring information from those dots on the map along with information about hydrology and sediment transport.

The knowledge gained through monitoring and illustrated in this figure is the foundation for the programmatic control measure approach employed in this permit term to reduce PCBs and mercury loads. Because we now know that old bayside industrial lands are generally where we find higher PCBs concentrations, this helps to refine the control measures in the permit. Thus, we have required Permittees to search for contaminated source properties (see Provisions C.11/12.b) in old industrial areas and to focus implementation of control measures in the moderately contaminated portions of old industrial land use (see Provisions C.11/12.c). Finding contaminated properties and addressing ongoing moderate contamination in these formerly old industrial bayside areas is an important element in reducing PCBs loads to the Bay. Moreover, addressing these areas has an environmental justice dimension as well. These old industrial areas are often near where historically disadvantaged communities have been compelled to live because of the unaffordability of less contaminated upland areas. Removing contamination from these areas helps improve the quality of life for these communities. Additionally, the PCBs and other contaminants from these older industrial areas are transported to the Bay and can cause some popular fish species caught from nearby shoreline fishing locations used by local anglers to be unsafe to consume.

The Water Board also uses the available monitoring data to develop mathematical relationships between a unit of control measure implementation activity (e.g., a referral of a source property or a treatment device installed in old industrial land use) and an estimated load reduction. This accounting program is fully described in work produced and refined by the programs during the MRP 2 permit term.²⁸⁶ These data were also used to calibrate and validate a variety of watershed loading models to generate estimates of the PCBs and mercury load reductions from green stormwater infrastructure (GSI) implementation as part of the Reasonable Assurance Analyses prepared by the Permittees during the MRP 2 permit term.

In addition to monitoring data, the programmatic approach is also informed by other information related to control measure implementation. For example, Permittees (as part of their 2019-2020 Annual Reports) estimated the PCBs and mercury load reductions that will be realized as GSI is implemented through time. In order to do this, Permittees estimated the pace of GSI implementation and used information about GSI performance, concentrations of PCBs and mercury in watersheds (from monitoring data), combined with information about rainfall, hydrology, soil type, slope, amount of impervious area, and other inputs.

Permittees also gathered information that allowed the Water Board to estimate the magnitude of PCBs load reductions by implementing BMPs when buildings containing PCBs (in caulks and sealants) are demolished. There is information on the typical amount of PCBs in such buildings and the effectiveness of control measures and the number of buildings that are demolished in a typical year.^{290, 286} This information is used to establish factors to estimate the load reduction benefit of this program. It is too difficult, impractical, and time-consuming to implement monitoring efforts in the vicinity

of these demolition sites to generate these load reduction estimates, as previously described. A similar approach is used to derive a mathematical relationship between the number of bridges whose roadways are replaced and the amount of PCBs load reduction achieved through removal of the PCBs-containing caulk. Permittees developed the relationship by measuring the amount of PCBs in such caulk and calculating how much caulk is removed during a typical bridge refurbishment project.²⁸⁶

The programmatic approach for PCBs and mercury control measures is a practical means of ensuring accountability for control measure implementation. This approach relies on the above-described monitoring data and other information, which are used in a technically sound manner to derive the mathematical relationships between units of control measure implementation activity and load reduction. While it is theoretically possible to assess load reductions through an intensive program of monitoring (see discussion under Provision C.8.f, above) at hundreds of locations upstream and downstream of control measure implementation, the effort and expense to undertake such a monitoring program would consume all or nearly all available resources that would be better spent on control measure implementation, as discussed above in the Fact Sheet for Provision C.8. The Permit's more practical and resource-efficient approach is to use monitoring data to inform control measure design and accountability metrics, as well as to calibrate and validate quantitative models to estimate loads and changes in loads. In this way, we use models to extrapolate from those places and times for which we have monitoring data to those times and places where we do not.

Background on Specific Provisions:

Pursuant to CWA § 402(p)(3)(B)(ii)-(iii) and 40 CFR § 122.44(d)(1)(vii)(B), Provisions C.9 through C.14, C.18, and C.19 contain technology-based requirements to control pollutants to the MEP, such other provisions the Water Board has determined appropriate for the control of pollutants under CWA, water quality-based requirements consistent with the assumptions and requirements of any WLAs in the applicable TMDLs, and requirements to effectively prohibit non-stormwater discharges into storm sewers. Provision C.9 contains requirements to implement the TMDL for pesticide-related toxicity in urban creeks. Provision C.10 contains requirements to implement narrative water quality objectives related to trash in all receiving water and water quality control plan prohibitions on trash discharges. Provision C.11 contains requirements to implement the San Francisco Bay mercury TMDL WLAs and the TMDL WLAs for mercury in the Guadalupe River Watershed. Provision C.12 contains requirements to implement the San Francisco Bay PCBs TMDL WLAs. Provision C.13 contains requirements to implement the copper site-specific objectives for San Francisco Bay. Provision C.14 contains requirements to implement the TMDL WLAs for bacteria at San Pedro Creek and Pacifica State Beach; San Francisco Bay Beaches (in the City of San Mateo); and Pillar Point Harbor and Venice Beach. It also contains requirements for the cities of Mountain View and Sunnyvale for their discharges that are causing or contributing to exceedances of water quality standards in Stevens Creek (both cities),

Calabazas Creek (Sunnyvale) and Sunnyvale East Channel/Guadalupe Slough (Sunnyvale) for which there are no TMDLs. These requirements are consistent with these bacteria TMDL WLA implementation requirements. Provision C.18 contains requirements to implement the Pescadero-Butano Watershed Sediment TMDL and the Water Quality Improvement Plan for sediment in the San Gregorio Creek watershed. Provision C.19 contains requirements to implement the pesticides and methylmercury TMDLs and other requirements in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins applicable to Permittees in eastern Contra Costa County.

C.9. Pesticides Toxicity Control

Fact Sheet Findings in Support of Provision C.9

- C.9-1** This Permit implements the TMDL and Water Quality Attainment Strategy for diazinon and pesticide-related toxicity for all Bay Area urban creeks, as defined in the Basin Plan Amendment adopted by the Water Board on November 16, 2005, and approved by the State Water Board on November 15, 2006. The Water Quality Attainment Strategy requires urban runoff management agencies to minimize their own pesticide use, conduct outreach to others, lead monitoring efforts, and take actions related to pesticide regulatory programs. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff.
- C.9-2** The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations.

This provision is consistent with 2014 U.S. EPA Memo ²⁵⁵ providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear actions to achieve pesticide load reductions as well as other requirements (see Provision C.9.f) necessary to achieve receiving water limits. The timeline for achieving the TMDL is not a fixed date for the following reasons. Pesticide-related toxicity continues to occur because state and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. The TMDL implementation plan recognizes that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and state law; and (2) because a realistic date for achieving allocations cannot be discerned given the current pesticide regulatory framework. Thus, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline.

Specific Provision C.9 Requirements

Provision C.9 implements the TMDL for Urban Creeks Pesticide Toxicity. All C.9 subprovisions are stated explicitly in the implementation plan for this TMDL. Permittees are encouraged to coordinate activities with other agencies and organizations. The list of urban-use pesticides of concern to water quality includes pesticides for which local

²⁵⁵ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

area monitoring data exceed or approach benchmarks and pesticides currently linked to toxicity in surface waters.

Pesticides monitoring is specified in Provision C.8.g. Pesticides and Toxicity Monitoring.

C.9.a through C.9.d are designed to ensure that integrated pest management (IPM) is adopted and implemented as policy by all municipalities. IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of complementary techniques such as biological control (e.g., natural predators and parasites), habitat manipulation, modification of cultural practices, use of resistant varieties, various physical techniques, and considers pesticide treatments as a last resort. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. The implementation of IPM will be assured through training of municipal employees and contractor requirements. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM techniques could include biological controls (e.g., ladybugs and other natural enemies or predators); physical or mechanical controls (e.g., hand labor or mowing, caulking entry points to buildings); cultural controls (e.g., mulching, alternative plant type selection, and enhanced cleaning and containment of food sources in buildings); and reduced risk chemical controls (e.g., soaps or oils). IPM is defined broadly by the University of California Agriculture & Natural Resources Statewide IPM Program,²⁵⁶ and an example IPM plan is provided by UC Davis.²⁵⁷ University of California Agriculture and Natural Resources provides guidance to public agencies on the development of IPM policies and programs.²⁵⁸ More resources are provided by the California Department of Pesticide Regulation²⁵⁹ and by the National Pesticide Information Center.²⁶⁰ The Glossary attached to this Permit includes expanded IPM definitions adapted from the UP Provisions.

C.9.e directs the municipalities to conduct outreach to consumers at point of purchase, to residents who contract for pest control, and to pest control professionals. Such targeted outreach is intended to make the public and pest control professionals aware of the water quality impacts of current-use pesticides that are impacting or have potential to negatively impact urban creeks.

C.9.f requires that municipalities (through cooperation or participation with BAMSC and CASQA) track and participate in pesticide regulatory processes like the U.S. EPA pesticide evaluation and registration activities related to surface water quality, and the California Department of Pesticide Regulation pesticide evaluation activities. The goal of

²⁵⁶ <https://www2.ipm.ucanr.edu/What-is-IPM/>

²⁵⁷ <https://ucdavis.app.box.com/v/UCDavisIPMPlan2014PDF>

²⁵⁸ <https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8093>

²⁵⁹ <https://www.cdpr.ca.gov/docs/schoolipm/>

²⁶⁰ <http://npic.orst.edu/pest/ipm.html>

these efforts is to provide pertinent water quality data and encourage both the state and federal pesticide regulatory agencies to fully evaluate aquatic impacts and to mitigate for impacts to urban water bodies within the pesticide regulation or registration process. Accomplishing this goal would represent the most efficient and effective means to prevent pesticide-related water quality problems in the future.

C.9.g requires Permittees to evaluate the effectiveness of their pesticide source control actions and is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the Permit. The particulars of assessment will depend on the nature of the control measure.

C.10. Trash Load Reduction

Legal Authority

The following legal authority applies to section C.10:

Clean Water Act: CWA sections 402(p)(3)(B)(ii) and (iii) require municipal stormwater permits to effectively prohibit non-stormwater discharges and to reduce the discharge of pollutants in stormwater to the maximum extent practicable. Trash can be considered both a non-stormwater discharge (see 40 CFR 122.26, subd. (b)(2)) and a pollutant. Accordingly, the Order's requirements to reduce trash loading are required to implement both the non-stormwater discharge prohibition and the reduction of pollutants to the maximum extent practicable.

Basin Plan: Trash load reductions are also required to protect beneficial uses and achieve water quality objectives in the receiving water. Basin Plan Prohibition 7 prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters, or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. The Basin Plan also contains narrative water quality objectives applicable to trash: floating material (waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses); settleable material (waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses); and suspended material (waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses).

Trash Amendments: The trash load reduction provisions of this Order are also consistent with the State Water Board's 2015 amendments to the Ocean Plan and Inland Surface Waters and Enclosed Bays to control trash (Trash Amendments). The Trash Amendments establish a narrative water quality objective for trash; prohibit "the discharge of Trash to surface waters of the State or the deposition of Trash where it may be discharged into surface waters of the State;" provide implementation requirements for permitted storm water dischargers; set a time schedule for compliance and provide a framework for monitoring and reporting requirements.

Because trash overwhelmingly reaches receiving waters via stormwater, the Trash Amendments anticipate that NPDES stormwater permits will implement the trash prohibitions. NPDES stormwater Permittees have two "tracks," or alternative pathways, for achieving compliance with this prohibition. Permittees in Track 1 must install, operate, and maintain full capture systems for all storm drains that captures runoff from the priority land uses in their jurisdictions;" while Permittees in Track 2 must install, operate, and maintain any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4 permittees." The State Water Board determined that the Trash Load Reduction

requirements of the previous MRP were “substantially equivalent” to Track 2 (Trash Amendments, p. D-5, fn. 2.).

Permittees in Track 2 are required to demonstrate that the combination of methods achieves full capture system equivalency. The C.10 requirements of this Permit are consistent with the Statewide Trash Amendments and the trash controls Permittees are required to implement are designed to achieve full trash equivalency. Permittees are required to implement a trash control plan using a combination of controls, such as full capture systems, or other controls (e.g., street sweeping, on-land pickups) that are equivalent to trash full capture systems and that can be verified through visual assessment as described in Provision C.10.b.iii, below. The Statewide Trash Amendments require Track 2 Permittees to fully comply with the Trash Amendments (trash water quality objective, trash prohibition, and implementation requirements) within ten years of the effective date of the first implementing NPDES MS4 permit. MRP 2 became effective on January 1, 2016, and is the first permit implementing the Trash Amendments. Therefore, MRP Permittees must fully comply with the Trash Amendments no later than December 31, 2025, except the East Contra Costa County Permittees, which were not subject to MRP 2 when it became effective in 2016.

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(i) requires “a demonstration that the [Permittee] can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the [Permittee] at a minimum to . . . (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A)(1) requires “a description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires “a description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR § 122.44(d)(1)(i) requires limitations for pollutants which are or may be discharged at a level which has the reasonable potential to cause or contribute to an excursion above any water quality standard, including any narrative criteria for water quality.

Trash is being discharged at levels that have the reasonable potential to cause or contribute to excursions of these narrative water quality objectives. There are currently 27 waterbodies in the Region impaired by trash on the Clean Water Act section 303(d) list; most of these receiving waters receive discharges from Permittees’ municipal storm drain systems. Elsewhere, trash is being discharged at levels that have the reasonable potential to cause or contribute to excursions of these narrative water quality objectives. U.S. EPA recommends that for MS4 discharges with reasonable potential to cause or contribute to a water quality excursion, a permitting authority exercises its discretion to include clear, specific, and measurable requirements and, where feasible, numeric effluent limitations as necessary to meet water quality standards.²⁶¹ In Water Quality Order Nos. 2015-0075, amended by 2021-0052-EXEC, and 2020-0038, the State Water Board affirmed the obligation of stormwater permittees to comply with receiving water limitations, including the requirement that discharges not cause or contribute to water quality standards exceedances. Where a permit allows alternative, or deemed, compliance with receiving water limitations, the alternative compliance pathway must have “appropriate rigor, transparency, and accountability,” and be “designed to ultimately achieve receiving water limitations.”²⁶² More specifically, “any alternative compliance path should ‘encourage watershed-based approaches, address multiple contaminants, . . . incorporate TMDL requirements,’ ‘encourage the use of green infrastructure and the adoption of low impact development principles,’ ‘have rigor and accountability,’ and require Permittees, ‘through a transparent process, to show that they have analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions.’”²⁶³ The State Water Board also reaffirmed the requirement to require adequate monitoring “to verify assumptions and update the solutions.” This permit’s alternative compliance measures contain the elements required by Order Nos. 2020-0038 and 2015-0075, amended by 2021-0052-EXEC are designed to meet water quality standards as quickly as possible and to implement the trash discharge prohibition by 2025.

²⁶¹ U.S. EPA, November 26, 2014, “Revisions to the November 22, 2002 Memorandum ‘Establishing Total Maximum Daily Load Waste Allocations for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs.’”

²⁶² Order No. 2020-0038, p. 13.

²⁶³ Order No. 2020-0038, p. 14, citing Order No. 2015-0075.

Fact Sheet Findings in Support of Provision C.10

- C.10-1** The State Water Board’s Trash Amendments define trash to encompass “all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.”
- C.10-2** Trash is a pervasive problem within the San Francisco Bay, as well as in creeks and shoreline areas throughout the Bay Area. Controlling trash from municipalities’ jurisdictions continues to be a priority for this Permit reissuance, not only because implementation of the trash discharge prohibition is imminent, but because trash adversely impacts the public’s enjoyment of the Bay, Ocean, and their watersheds and poses a serious threat to aquatic life and habitat. Plastic has pernicious effects in the ocean environment, where it can persist for hundreds of years, if not longer; can serve as a substrate for organic toxins; and can entangle or be ingested by aquatic life.
- C.10-3** The levels of trash in the waters of the San Francisco Bay Region were and are alarmingly high, considering the Basin Plan prohibits discharge of trash and that littering is illegal with potentially large fines. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to San Francisco Bay and the Pacific Ocean. Data collected by Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,²⁶⁴ over the 2003–2005 timeframe,²⁶⁵ suggested that then-existing approaches to managing trash in waterbodies were not reducing the adverse impact on beneficial uses. In 85 surveys conducted at 26 sites throughout the Bay Area, staff found an average of 2.93 pieces of trash for every foot of stream. All the trash was removed when it was surveyed, indicating high return rates of trash over the 2003–2005 study period. There did not appear to be one county within the Region with significantly higher trash in waters relative to other counties—the highest wet weather deposition rates were found in western Contra Costa County, and the highest dry weather deposition was found in Sonoma County. Neighborhoods at the bottom of the watershed, which tend to have lower property values, are subject to trash washing off with urban stormwater runoff cumulatively from the entire watershed.
- C.10-4** Trash generation in the United States has increased in the years since the SWAMP RTA trash assessments. For instance, figures from the U.S. EPA indicate that overall and per capita municipal solid waste generation have increased between 2005 and 2018, the last year for which data are

²⁶⁴ SWAMP Rapid Trash Assessment Protocol, Version 8

²⁶⁵ SWAMP S.F. Bay Region Trash Report, January 23, 2007

available.²⁶⁶ Packaging waste generation has increased by 7 percent, while plastic packaging waste generation, specifically, has increased 14 percent, during that same time period.²⁶⁷ Furthermore, the plastic going into the oceans is on course to rise from 11 million tons now to 29 million by 2040, according to a study published in June by Pew Trusts, an independent public interest group.²⁶⁸ It is reasonable to assume that trash generation in the Bay Area has increased in parallel with national trends, and that when overall trash generation is higher, more trash ends up in stormwater.

C.10-5 A number of key conclusions can be made on the basis of the trash measurement in streams:

- (1) Lower watershed sites have higher densities of trash.
- (2) All watersheds studied in the San Francisco Bay Region have high levels of trash.
- (3) There are trash source hotspots (usually associated with parks, schools, or poorly kept commercial facilities located near creek channels) that appear to contribute a significant portion of the trash deposition at lower watershed sites.
- (4) Homeless encampments and creekside litter from a variety of sources are a significant source of trash directly dumped and placed in the riparian zone where it can be swept into receiving waters by storm flows.
- (5) Dry season deposition of trash, associated with wind and dry season runoff, contributes measurable levels of trash to downstream locations.
- (6) Most trash is plastic at lower watershed sites where trash accumulates in the wet season. This is likely the result of several factors, including the increase in use of plastic as a packaging material and the material's persistence in the environment. The accumulation of plastic in downstream areas indicates that urban runoff is a major source of floatable plastic found in the ocean and on beaches as marine debris.
- (7) Parks that have more evident management of trash by city staff and local volunteers, including cleanup within the creek channel, have measurably less trash pieces and higher RTA scores.

²⁶⁶ Advancing Sustainable Materials Management: 2018 Fact Sheet; accessed at: https://www.epa.gov/sites/production/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf

²⁶⁷ U.S. EPA, 2018. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/containers-and-packaging-product-specific-data>

²⁶⁸ Verdon, Joan, April 27, 2021. "Global E-Commerce Sales To Hit \$4.2 Trillion As Online Surge Continues, Adobe Reports," Fortune.

- C.10-6** The ubiquitous, unacceptable levels of trash in waters of the San Francisco Bay Region warrant a comprehensive and progressive program of education, warning, and enforcement, and certain areas warrant consideration of structural controls and treatment.
- C.10-7** Trash in urban waterways of coastal areas can become marine debris, known to harm fish and wildlife and cause adverse economic impacts.²⁶⁹ Trash is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and ocean beaches throughout the San Francisco Bay Region, particularly in urban areas.
- C.10-8** Trash adversely affects numerous beneficial uses of waters, particularly recreation, wildlife and estuarine habitats, and rare and endangered species preservation. Besides the obvious negative aesthetic effects, trash can threaten the health and safety of beachgoers or other recreators. Medical waste, pet waste, and discarded diapers can spread disease, while metal and broken glass can cause injury.²⁷⁰ Entanglement in trash and marine debris is a major hazard to marine wildlife,²⁷¹ affecting at least 115 species of animals in the United States alone.²⁷² Marine species, including turtles and sea birds, are also widely known to ingest marine debris, particularly small pieces of plastic, causing injury, illness, and death,²⁷³ In addition, trash can contaminate water and sediments, as some household and industrial wastes contain toxic batteries, pesticide residues, and mercury and other heavy metals. Large trash items, such as discarded appliances, can present physical barriers to natural stream flow, causing physical impacts such as bank erosion. From a management perspective, the persistent accumulation of trash in a waterbody is of particular concern, and signifies a priority for prevention of trash discharges. Also of concern are trash hotspots where illegal dumping, littering, and/or accumulation of trash occur.

²⁶⁹ Moore, S.L., and M.J. Allen. 2000. Distribution of anthropogenic and natural debris on the mainland shelf of the Southern California Bight. *Mar. Poll. Bull.* 40:83-88.

²⁷⁰ Sheavly, S.B. 2004. Marine Debris: an Overview of a Critical Issue for our Oceans. 2004 International Coastal Cleanup Conference, San Juan, Puerto Rico. The Ocean Conservancy.

²⁷¹ Laist, D. W. and M. Liffmann. 2000. *Impacts of marine debris: research and management needs*. Issue papers of the International Marine Debris Conference, Aug. 6-11, 2000. Honolulu, HI, pp. 16–29.

²⁷² Entanglement of Marine Species in Marine Debris with and Emphasis on the United States, https://marinedebris.noaa.gov/sites/default/files/mdp_entanglement.pdf; see also Oceana, Choked, Strangled and Drowned (2020) https://usa.oceana.org/sites/default/files/2020/11/25/report_single_pagesdoi_choked_strangled_drowned_final.pdf

²⁷³ McCauley, S.J. and K.A. Bjorndahl. 1998. Conservation implications of dietary dilution from debris ingestion: sublethal effects in post-hatchling loggerhead sea turtles. *Conserv. Biol.* 13(4):925-929; Gilbert, J.M. et al. 2016. Plastic Ingestion in Marine and Coastal Bird Species of Southeastern Australia, *Marine Ornithology*. 44: 21-26. https://sora.unm.edu/sites/default/files/44_1_21-26.pdf

- C.10-9** The Water Board, at its February 11, 2009, hearing, adopted a resolution proposing that 26 waterbodies in the region be added to the 303(d) list for the pollutant trash. The adopted Resolution and supporting documents are contained in Attachment E - 303(d) Trash Resolution and Staff Report, February 2009.
- C.10-10** The trash control strategies, monitoring requirements, and mandatory deadlines for trash reductions meet the “Maximum Extent Practicable” (MEP) standard contemplated by the CWA and include such other provisions as the Board determines appropriate for control to ultimately meet the narrative water quality objectives for floating material, settleable material, and suspended material (CWA §402(p)(3)(B)(iii)). This Permit builds on the data and information collected in the last permit term and increases expectations of Permittees in this Permit. In particular, this Permit requires that the Permittees make significant progress toward having no trash impact on receiving waters by increasing implementation of full trash capture devices and ensuring that other trash reduction and elimination measures have similar effects to full trash capture. This is consistent with the statewide amendment to the Ocean Plan and the Inland Surface Waters, Bays and Estuaries Plan relating to trash controls. This Permit includes trash generation source identification and control, visual assessment data collection, and development of trash monitoring protocols. These requirements reflect the most current knowledge and data available concerning effectiveness of trash control strategies such as full trash capture, enhanced maintenance methods and current thinking regarding the best methods to assess trash reduction outcomes for the various trash reduction methods.
- C.10-11** The COVID-19 pandemic has produced a surge in trash from multiple sources, including discarded personal protective equipment, shipping materials, and takeout containers.²⁷⁴ Some of this trash has made it into waterways,²⁷⁵ and the Coastal Commission found that masks were one of the top 15 discarded items at its coastal cleanups.²⁷⁶

²⁷⁴ See, e.g., 2020 Beach Cleanup Annual Report, Surfrider (July 2021), p. 5; Ford, Don. “COVID In Oakland: Pandemic Sending Additional Trash Into Bay Area Waterways,” CBS San Francisco (Nov. 18, 2020); Kramer, Anna. “Eco-conscious Bay Area reckons with flood of plastic waste as coronavirus wears on,” *San Francisco Chronicle* (July 20, 2020); Chua, Jasmin Malik. “Online shopping has boomed in the pandemic. But what about all the packaging?” *Vox* (Jan. 8, 2021). Takeout orders increased 127% from March 2020 through March 2021. NPD, “U.S. Restaurant Carry-Out and Delivery Digital Orders Soar During the Pandemic” (May 11, 2021).

²⁷⁵ See, e.g., 2020 Beach Cleanup Annual Report, Surfrider, *supra*; “COVID In Oakland: Pandemic Sending Additional Trash Into Bay Area Waterways,” CBS San Francisco (Nov. 18, 2020); Alexander, Curtis. “First rain of season unveils a new pollution problem: masks and gloves - pandemic PPE,” *San Francisco Chronicle* (Nov. 18, 2020).

²⁷⁶ Alexander, Curtis. “First rain of season unveils a new pollution problem: masks and gloves - pandemic PPE,” *San Francisco Chronicle* (Nov. 18, 2020).

Even before the pandemic, the United States was the largest generator, per capita, of plastic packaging waste.²⁷⁷ Americans' packaging consumption has only grown during the pandemic,²⁷⁸ as some plastic bag bans, including California's, were suspended, grocery pickup and delivery soared, and online shopping increased in the United States by approximately 32 percent from 2019 to 2020.²⁷⁹ Shipping materials waste in particular has ballooned.²⁸⁰ Of the 465 million pounds of packaging waste that Amazon, alone, was estimated to have generated worldwide pre-pandemic, approximately 4.8 percent, or 22.4 million pounds, went into waterways.²⁸¹ In 2020, these figures can be assumed to have grown, as Amazon's profits soared by 84 percent.²⁸²

C.10-12 While some pandemic-related trash increases may subside during this permit term, other sources of increased trash may not. For instance, online shopping is projected to continue growing,²⁸³ and the concomitant heaps of shipping waste can be expected to keep growing, too. To accommodate this projected increase in waste, successful implementation of trash controls, particularly full-trash capture devices, is critical.

Specific Provision C.10 Requirements

C.10.a. Trash Reduction Requirements

C.10.a.i. Trash Reduction Schedule – This provision includes compliance benchmarks of 90 percent trash load reduction by June 30, 2023, and 100 percent trash load reduction by June 30, 2025. The 100 percent deadline represents a three-year extension of the 100 percent trash load reduction (or no adverse trash impact) target in MRP 2 of July 1, 2022. This extension is appropriate because it recognizes the Permittees' economic challenges associated with the COVID-19 pandemic, as well as

²⁷⁷ Parker, Laura. "Plastic Bag Bans Are Spreading. But Are They Truly Effective?" *National Geographic* (April 17, 2019).

²⁷⁸ Flexible Plastic Packaging Global Market Report 2021: COVID-19 Growth And Change (July 2021) (despite plastic bag bans and growing concern about the environmental impacts of packaging waste, the flexible plastic packaging sector grew 5.7% in 2020 due to the e-commerce boom.); Kickham, Victoria. "Strong Demand, Rising Costs Affect Packaging Strategies." *DC Velocity* (July 9, 2021) (shipments of corrugated cardboard reached a record high in 2020, an increase of 3.5 percent over 2019.)

²⁷⁹ Palmer, Annie. "Groceries and sporting goods were big gainers in the Covid e-commerce boom of 2020," *CNBC* (Feb. 19, 2021).

²⁸⁰ See Chua (2021), *supra*; see also Corkery, Michael. With 3 Billion Packages to Go, Online Shopping Faces Tough Holiday Test." *New York Times* (Dec. 5, 2020) (estimating that 800 million more holiday packages would be shipped in 2020 versus 2019).

²⁸¹ Oceana, Amazon's Plastic Problem Revealed (Dec. 15, 2020), pp.14-15.

²⁸² Kohan, Shelley, "Amazon's Net Profit Soars 84% With Sales Hitting \$386 Billion," *Forbes* (Feb. 2, 2021); Thomas, Lauren. "As e-commerce sales proliferate, Amazon holds on to top online retail spot." *CNBC* (June 18, 2021).

²⁸³ Verdon, Joan. "Global E-Commerce Sales To Hit \$4.2 Trillion As Online Surge Continues, Adobe Reports," *Fortune* (April 27, 2021).

challenges associated with controlling trash from the Permittees' remaining uncontrolled areas. Permittees have appropriately prioritized controlling trash from the highest trash generation areas in MRP 1 and MRP 2 and must now address a large area of moderate-level significant trash generating areas from which trash must be controlled.

C.10.a.ii. Trash Generation Area Management – The overarching strategy for reducing trash involves mapping trash generation areas within a Permittee's jurisdiction, then applying effective trash reduction actions to the areas of trash generation and assessing the effectiveness of those actions in delineated trash generation areas, until trash generation is reduced to the no impact level over a Permittee's entire jurisdiction. The Permittees reported these trash generation maps with their Long Term Trash Reduction Plans February, 2014, and these maps provide the 2009 trash generation levels, which were required under MRP 1. Permittees that found inaccuracies in their submitted maps had the opportunity to submit corrected 2009 trash generation maps with their 2016 Annual Reports. Permittees developed their maps by dividing their jurisdiction into Very High, High, Moderate, and Low trash generation areas based on the following ranges of trash generation rates:

- Low = less than 5 gal/acre/yr;
- Moderate = 5-10 gal/acre/yr;
- High = 10-50 gal/acre/yr; and
- Very High = greater than 50 gal/acre/yr.

C.10.a.ii.a. Actual trash loading values, particularly in areas of high and very high trash generation areas, may vary significantly, but these delineated ranges provide a frame of reference for tracking and demonstrating trash load reductions and provide relative trash generation weight of these four categories. Permittees will likely need to reduce trash generation to at least Low to attain the ultimate required water quality-based outcome of no trash loads that cause or contribute to adverse trash impacts in receiving waters by June 30, 2025. Whether attainment of Low trash generation rates will be sufficient will be evaluated and considered in the development of requirements in the next permit. Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to a Low trash generation rate during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the June 30, 2023, and June 30, 2025, 90 and 100 percent trash load reduction requirements, respectively. Permittees are required to implement trash prevention and control measures, including full trash capture systems (as defined in Provision C.10.a.ii.a), or other trash management actions, or a combination of actions equivalent to or better than full trash capture systems, to meet the required load reductions as described above in section C.10.a.i and to achieve the trash reduction outcomes required by the Trash Amendments.

C.10.a.ii.b. Permittees are responsible for trash discharges from their storm drain systems, including trash generated and discharged from private land areas that are either moderate, high, or very high trash generating and plumbed to the Permittees MS4 system. Permittees have direct control over their properties and right of way, but must also exert control over the private lands described above, such as commercial parking lots, that are plumbed to municipal storm sewer systems, since trash washed into such conveyances by stormwater directly impacts receiving waters without encountering trash controls on public rights of way. Permittees may use a variety of means to ensure that either full trash capture devices are installed at storm drain inlets on private land prior to intersection with the public storm drain system, or that other control actions, equivalent to full trash capture, are implemented on those private lands and such actions are verified through assessment, similar to the on-land visual assessment. Also, if there is a full trash capture device downstream of these lands that is designed, operated, and maintained to control trash discharges from that land area, no other trash control would be necessary.

C.10.b Demonstration of Trash Reduction Outcomes

C.10.b.i.(a-b) Full Trash Capture Systems - Full trash capture systems must be appropriately maintained to be effective. If a full trash capture system enters the wet season clogged with leaves or trash, trash will bypass the device, preventing it from functioning appropriately. During device inspections over the course of the previous permit term, Water Board staff observed roughly 20 percent of the inspected full trash capture devices required cleaning and/or repair or replacement. This Permit maintains the MRP 2 requirement for Permittees to inspect and maintain their full trash capture devices at a minimum frequency of once per year and, sufficient to prevent plugging (including plugging of the 5 mm screen) that could otherwise lead to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash. Within High and Very High trash generation areas, Permittees are expected to inspect (and maintain if necessary) their full trash capture devices at a minimum frequency of twice per year, with the inspections spaced at least three months apart. Justification for the higher maintenance frequency within High and Very High trash generation areas is due to the increased speed with which full trash capture devices are expected to get plugged with trash and/or debris if not maintained. Permittees are required to maintain adequate maintenance records and report any full trash capture devices found to be not adequately maintained or improperly functioning. Permittees are also required to certify annually that all their full trash capture devices are adequately operated and maintained.

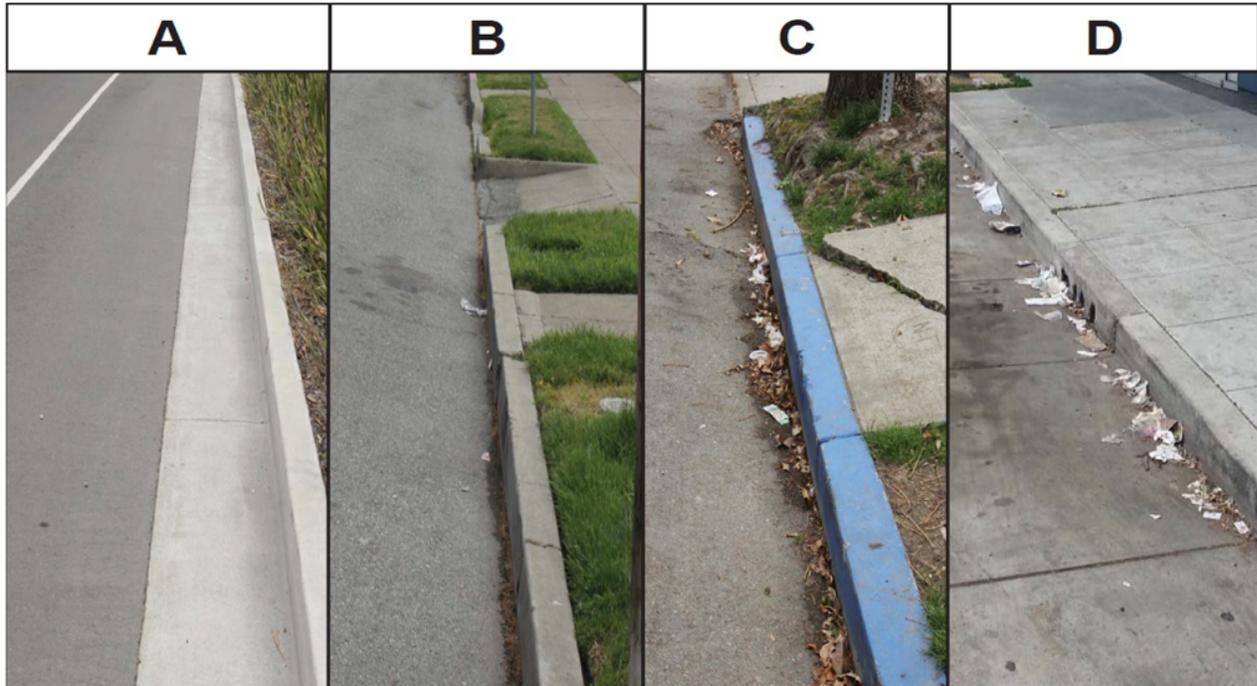
C.10.b.iii. Other Trash Management Actions

C.10.b.iii.a. Implementation Documentation – Documentation of trash management or control actions implemented and areas of implementation is essential to support trash reduction effectiveness and trash condition improvement.

C.10.b.iii.b.((i)-(iv)) Visual Assessment of Outcomes of Other Trash Management Actions – The primary tool currently available for determining trash reduction action success and positive outcomes is visual assessment, with photo documentation of trash generation and conditions in areas that drain to storm drains. Visual assessment involves observing a sufficient portion of each, e.g., sidewalk and curb area, at a frequency that adequately represents the trash management area condition relative to the type(s) of management actions implemented in the area. The frequency of required visual assessments depends on the rate of trash generation, the sources and types of trash, trash management actions deployed, and time of year. During the wet season, October through April, visual assessments in a trash management area must be conducted at a frequency that determines whether there may be trash discharges to the storm drain system from sources or areas of trash accumulations before a trash management action or combination of actions is implemented or between recurring trash management actions. The degree of trash reduction that a Permittee claims may also affect the frequency of visual assessment necessary to make the claim.

Permittees, with justification, may conduct fewer frequent visual assessments for claims that a trash generation area has been reduced from what was a very high trash generation area to a high or moderate trash generation area or from what was a high trash generation area to a moderate trash generation area. Frequency of visual assessments during the dry season, May through September, should be at least once per quarter, including, and preferably, within the month (September) before the wet season begins. Higher frequencies of visual assessments than those illustrated above may be required to demonstrate effectiveness of trash control actions and claimed trash reduction. Lower frequencies than those illustrated above may also be acceptable with justification.

Visual assessment is an effective, simple, and comparatively inexpensive method of monitoring to assure compliance with the Permit's requirements to implement trash management actions to reduce trash discharges into municipal storm drains (See 40 CFR § 122.44(i)). The required amount, type, interval and frequency of on-land visual trash assessments should yield data that is representative of the monitored activity, as required by 40 CFR § 122.48(b). This graphic demonstrates four trash visual conditions that correspond to the four trash generation categories of Low (A), Moderate (B), High (C), and Very High (D).



It is also possible to assess trash reduction outcome by documenting and verifying that trash management actions in a trash management area are equivalent to trash management actions implemented in an equivalent trash management area, and the actions in the equivalent trash management area have been assessed to be effective in accordance with a specified performance standard and the assessment results are reproducible. In such cases, it may be possible to extrapolate the performance assessment results to the equivalent trash management area with some verification. If this evidence is proposed by Permittees and accepted by the Executive Officer after public review, Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within similar trash management areas to the same performance standard.

C.10.b.iv. Percentage Discharge Reduction – Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to lower trash generation categories and the Low generation status during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the 90 and 100 percent trash load reduction requirements (Provision C.10.a.ii.a). However, trash management actions within Very High and High trash generation areas will result in more trash load reduction than actions within Moderate trash generation areas. Accordingly, a trash reduction demonstration methodology that provides weighted benefit to actions in Very High and High areas is preferable to one that just considers percentage change in Very High, High, and Moderate trash generation areas. The trash generation rates used by Permittees to delineate and map their 2009 trash generation area maps have been used to provide a weighted benefit to the demonstrated

reductions in the areas of Very High and High trash generation, even if they are not reduced all the way to Low trash generation.

The delineation of trash generation areas were based on ranges of trash generation rates (Provision C.10.a.ii). Therefore, the ratios of the approximate midpoints of the categorical trash generation ranges provides a means of weighing relative benefit to actions in Very High and High areas compared to actions in Moderate areas. The Moderate range is 5-10 gal/acre/yr, with a midpoint of 7.5 gal/acre/yr. The High range is 10-50 gal/acre/yr with a midpoint of 30 gal/acre/yr. Therefore, the weighed ratio of High to Moderate is $30/7.5 = 4$. The Very High range, greater than 50 gal/acre/yr, does not have a specified upper bound that allows calculation of a midpoint. An alternative that provides reasonable weighing of Very High is 90 gal/acre/yr, which is 40 percent higher than the low end of the Very High range. This results in a weighed ratio of Very High to Moderate of $90/7.5 = 12$.

The following formula provides a means of calculating the percent trash load reduction achieved (relative to the 2009 baseline conditions) with assigned weighted benefit factors for Very High and High trash generation areas relative to Moderate trash generation areas:

$$\% \text{ Reduction} = 100 \left[\frac{(12 A_{VH(2009)} + 4 A_{H(2009)} + A_{M(2009)}) - (12 A_{VH} + 4 A_H + A_M)}{(12 A_{VH2009} + 4 A_{H2009} + A_{M2009})} \right]$$

where:

$A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area

A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year

A_H = total amount of high trash generation category jurisdictional area in the reporting year

A_M = total amount of moderate trash generation category jurisdictional area in the reporting year

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

100 = fraction to percentage conversion factor

C.10.b.v. Source Control – Permittee jurisdiction-wide actions to reduce trash at the source, e.g. through ordinances banning or taxing certain waste items, have trash generation and load reduction benefits beyond what can be accounted for in trash management area specific assessment-based percentage discharge reductions (Provision C.10.b.iii). For example, persistent floating litter and other particularly difficult types of trash that are easily blown by the wind or clog full trash capture devices (such as polystyrene food ware, plastic bags, fragmented plastic, etc.) have been documented to be a significant percentage of the trash collected in full trash capture devices. Permittees that have implemented source control measures have documented a decrease in such items within their trash management area. Permittees will be allowed to claim up to ten percent load reduction for implementing appropriate source control actions to reduce persistent trash items other than those addressed under previous Permits (foam foods are and single-use plastic bags). The 10 percent credit stems from a study done by Santa Clara Valley Urban Runoff Pollution Prevention (SCVURPP) program in 2015 that looked at pre- and post-ordinance characteristics of trash. The study found that approximately 70 percent fewer single use bags were observed in stormwater after the source control ordinance went into effect. Based on these results, the City estimated that an approximate 70 percent reduction in the number of single use bags in stormwater equates to an offset benefit of up to 10 percent in the overall volume

of trash discharged through the City's MS4 system. This is an interim credit (added to the percent Reduction amount calculated by the Provision C.10.b.iv - Percentage Discharge Reduction formula) that will be phased out at the end of the permit term. To claim the ten percent load percentage reduction value, Permittees must provide substantial and credible evidence that the source control actions implemented reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides credible evidence that the source control actions implemented would achieve comparable trash reduction if implemented in the Permittee's jurisdiction.

Permittees may no longer claim a jurisdiction-wide source control load reduction value after June 30, 2025, because they must comply with the 100 percent reduction after that date through full trash capture or full trash capture equivalent controls. Furthermore, applying a jurisdiction-wide source control load reduction value to areas managed with full trash capture or full trash capture equivalent controls would result in an unrealistic claim of greater than 100 percent trash load reduction in those areas. However, Permittees may demonstrate and claim full trash capture equivalence of a source control in specific trash generation areas or in combination with other controls in an area if the control or combination of controls are documented, assessed, and verified in accordance with Provision C.10.b.iii.

C.10.b.vi. Partial Trash Reduction – Curb Inlet Screens – During MRP 2, Permittees assessed the benefit of curb inlet screens, in combination with street sweeping, in reducing the amount of trash discharged through MS4s. The study showed that curb inlet screens, when paired with an appropriate street sweeping program, can be effective in blocking larger trash items (such as bottles or plastic bags) from discharging through the MS4 system. However, the study also showcased several drawbacks of curb inlet screens. For instance, the effectiveness of curb inlet screens in preventing larger trash items from discharging through the MS4 was dependent on the presence of horizontal surface grates installed to support the device. In the absence of horizontal surface grates, the study concluded that the increase in hydraulic pressure from stormwater flows could potentially force open the retractable screens and thus allow more trash and/or debris to enter the curb inlet and negate the benefit of the installed device. In addition, the study did not evaluate the use of a 5mm screen, within the horizontal surface grate, to prevent trash items greater than 5 mm in diameter from discharging into the MS4. As a result, smaller persistent trash items (e.g., cigarette butts, straws, fragmented plastic, and polystyrene foodware) could readily enter the MS4 through the unscreened horizontal surface grate despite the installation of a curb inlet screen. These smaller trash items are more effectively removed from storm drain inlets that have a full trash capture device (due to the 5 mm minimum screen threshold requirement). Finally, the effectiveness of curb inlet screens was contingent upon the proper implementation of a street sweeping program that collected trash items that would otherwise have accumulated in the streets and washed into the curb inlet. Inadequate street sweeping in areas with high levels of trash generation can lead to

trash accumulation against the screen and reduce screen performance. However, the study did not evaluate the effects of street sweeping on curb inlet screen performance.

Despite the promise of curb inlet screens for trash control in areas where full trash capture devices cannot be installed, there is a need for further investigation into the deficiencies of curb inlet screens and the complementary actions, such as street sweeping, that can help overcome these deficiencies. The Water Board supports: 1) recognizing the potential benefit curb inlet screens may provide, 2) characterizing that benefit appropriately (e.g., whether it gets Moderate areas all the way to Low, or whether it only gets part of the way there), and 3) better understanding how curb inlet screens can fit into Permittees' long-term trash control strategies. The requirement in C.10.b.vi. for additional study of the effectiveness of curb inlet screens will help to substantiate their benefits.

C.10.c. Requirements for Flood Management Agencies

Flood management agencies are required to continue implementing trash control measures such as trash pickups and installation of trash receptacles to control Moderate, High, and Very High trash generation areas within their jurisdiction, as well as the continued implementation of trash capture requirements as specified in Table 10-1 of Provision C.10.c.

C.10.d. Trash Load Reduction Plans

Similar to the previous permit requirement, Permittees are required to maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the 90 percent trash load reduction requirement by June 30, 2023 and the 100 percent trash load reduction requirement by June 30, 2025. A Trash Load Reduction Plan provides a means for Permittees to determine and account for appropriate trash management actions in their trash management areas and their schedule of implementation, and it provides documentation of planned actions that can be referenced if annual performance guidelines are not met. It also provides a basis for justifying and accounting for the types and locations of Permittees' assessments of trash management actions, and for optional trash load offset opportunities allowed by Provision C.10.f

C.10.e. Impracticability Report

In some areas within a Permittees' jurisdiction, engineering constraints such as flood risk, flat pipe grade, and/or safety concerns may make it impracticable to control trash to a Low generation rate via a full trash capture device. This Provision allows Permittees to develop an impracticability report to document the constraints in installing full trash capture devices and focus their efforts on planning for alternative control actions to meet the requirements and deadlines in Provision C.10.a.. Once approved, the trash impracticability report shall be used in developing the updated Trash Load Reduction plan as described in Provision C.10.d. An impracticability report is an optional submittal to assist with compliance.

C.10.f. Optional Trash Load Reduction Offset Opportunities

C.10.f.i. Creek and Shoreline Cleanup - Permittees may offset part of their Provision C.10.a trash load percent reduction requirement by conducting cleanup of creek and shoreline areas. These creek and shoreline cleanups are of value in the interim until full trash capture or equivalency is implemented by removing trash from shorelines and creeks or creek banks that are causing or may cause adverse impacts to receiving waters. Permittees conduct some of these additional cleanups with community volunteers, which creates additional public outreach and participation benefits.

One way to recognize the value of these additional cleanups and to account for the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume /time) is to use an offset ratio of ten to one for the mandatory 90 percent compliance benchmark by June 30, 2023. The following formula generates a Permittee-specific trash volume amount, based on its 2009 categorical trash generation areas and a ten to one offset ratio, which may be used to offset one percent of a required percent load reduction value:

$$1\% \text{ Reduction Offset (volume)} = (12 A_{VH(2009)} + 4 A_{H(2009)} + A_{M(2009)}) OF$$

where:

$A_{VH(2009)}$ = total amount of 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of 2009 moderate trash generation category jurisdictional area

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

OF = offset factor equal to (7.5×0.1) for the 2023 mandatory trash load reduction deadline performance guideline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

A Permittee can compare the volume of trash collected from additional cleanups to this calculated offset volume and apply one percent offset to a Provision C.10.a.i percent load reduction requirement for each collected volume that equals the 1 percent Reduction Offset (volume). However, the total offset that can be claimed to avoid over-compensation associated with the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume/time) is limited to ten percent. Furthermore, to justify the offset the associated cleanups must occur more than once per year and preferably at a frequency sufficient to demonstrate sustained improvement of a creek or shoreline area. Offset values for creek and shoreline cleanups will no longer be applicable after June 30, 2025, when compliance with the 100 percent trash load reduction requirement is required through implementation of full trash capture systems or equivalent controls. The State Trash Amendments do not allow offset credit for creek or shoreline cleanups in lieu of implementing MS4 controls to meet the Trash Discharge Prohibition.

C.10.f.ii. Direct Trash Discharge Controls - Some Permittees are faced with the challenge that large amounts of trash are discharged to receiving waters in their jurisdiction from homeless encampments and direct dumping. These trash discharges are separate from and in addition to discharges from Permittee storm drain systems. Elimination and prevention of adverse water quality impacts due to trash and attainment of water quality standards in receiving waters will require management of these non-storm drain system discharges in addition to control of storm drain system trash discharges by Permittees. In MRP 2, several Permittees developed Direct Discharge Control Plans (DDCPs), which are comprehensive plans that describe actions the Permittee will implement to control these other sources of trash discharged to receiving

waters in their jurisdiction. Accordingly, Permittees should be allowed to offset some of their percent load reduction requirements if they control these other sources, both by removing trash after it has already impacted receiving waters, and by taking steps to permanently reduce direct discharges of trash through the provision of housing and services to unsheltered homeless populations (particularly those located near receiving waters) and by abating and implementing controls at illegal dumping sites (particularly those located near receiving waters).

When Permittees meet the needs for housing and associated services of people experiencing unsheltered homelessness, they are likely to reduce the number of people experiencing homelessness, and the presence of homeless encampments from which direct discharges may occur. Therefore, a key best management practice for mitigating the adverse water quality impacts associated with homelessness is to provide housing and services. If Permittees provide housing, but not services, unsheltered homeless people whose needs for services are not met may leave the provided housing and re-establish homeless encampments. If Permittees provide services, but not housing, it is likely that there will be ongoing direct discharges of trash at homeless encampments, because services provided at homeless encampments have often insufficiently prevented direct discharges. If the needs for both housing and services by people experiencing unsheltered homelessness *are* satisfied, those people are less likely to re-establish homeless encampments, and therefore they are less likely to directly discharge trash from homeless encampments.

Likewise, providing dumping vouchers and holding free waste drop-off events, especially to socioeconomically disadvantaged communities, is likely to avoid and reduce direct discharges at illegal dumping sites.

Examples of sanitary controls include opening restrooms in public buildings, porta potties, hand washing stations and showers that are provided at a sufficient number and provisioned and cleaned at a sufficient rate. Examples of trash controls include trash receptacles that are sufficiently large depending on the homeless encampment, and that are emptied at a sufficient rate.

The Permit's expectation is that housing and services provided to populations experiencing unsheltered homelessness, and structural and institutional mitigation of illegal dumping sites, will increase over the course of the Permit term. This will be tracked by the reporting required in Provision C.10.g.xi.

Because the criteria for what is an acceptable DDCP have changed from the Previous Permit, and because Permittees may have updated their DDCPs over the course of the Previous Permit, this Permit requires Permittees with existing DDCPs to submit their updated DDCPs for approval before the first new water year during the Permit term, in order to continue claiming trash load percent reduction offsets.

Permittees have and likely will continue to demonstrate the benefit of controlling these additional sources by accounting for the volume of trash collected. As with additional

creek and shoreline cleanups, the volume of trash removed cannot be compared directly with trash load discharge rate (volume/time). The simplest, and possibly only way to account for these additional control actions, until more rigorous assessment and accountability methods are developed, is to allow a Permittee to offset part of its Provision C.10.a trash load percent reduction requirement using the Provision C.10.f.i formula to determine an offset from additional creek and shoreline cleanup. However, since control of these other sources by Permittees will be through implementation of a comprehensive and sustained program, Permittees that implement a comprehensive plan approved by the Executive Officer merit a higher offset cap than that allowed by Provision C.10.f.i for additional creek and shoreline cleanup. A fifteen percent offset-cap based on the Provision C.10.f.i formula provides a balance between incentive and reward for control of these non-storm drain system sources and the uncertainties associated with the simple formula.

This offset will no longer be applicable after June 30, 2025, when compliance with the 100 percent trash load reduction requirement is required through implementation of full trash capture systems or equivalent controls. The State Trash Amendments do not allow offset credit for direct discharge controls in lieu of implementing MS4 controls to meet the Trash Discharge Prohibition.

Permittees that develop and implement DDCPs are generally challenged with greater volumes and areas of trash to control, so it is reasonable to allow those Permittees additional time to reach the 100 percent trash load reduction compliance benchmark as they continue to implement their DDCPs. Those Permittees, other than the East Contra Costa County Permittees, that implement an approved DDCP may be granted additional time until December 31, 2025, which is the latest compliance date allowed by the Statewide Trash Amendments, to attain 100 percent trash load reduction. Permittees that are allowed until December 31, 2025, to attain 100 percent trash load reduction must report compliance status as described in C.10.g.viii. The East Contra Costa County Permittees that implement an approved DDCP may be granted until June 30, 2026, to attain 100 percent trash load reduction, because they are not subject to the same December 31, 2025, deadline under the Trash Amendments. These permittees were subject to MRP 2 after its effective date in 2016.

C.10.g. Reporting - The reporting requirements reflect the minimum amount of information needed to demonstrate compliance with all Provision C.10 requirements.

C.11. Mercury Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay and Guadalupe River watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury wasteload allocations established for the TMDLs.

The C.11 provisions follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)) and accordingly, build on understanding gained from control measure implementations during the previous permit terms. During the Previous Permit, Permittees were required to implement mercury control measures (source control, treatment control and/or pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and to report on the loads reduced through implementation of those control measures.

In this permit term, the mercury control provision requires specific programmatic control measures deemed effective based on implementation experience and analyses in previous permit terms implemented at full-scale (a “programmatic approach”). For mercury, these control measures include: mercury collection and recycling, source property identification and abatement, control measure implementation in old industrial areas, and green stormwater infrastructure implementation.

The “programmatic approach” to mercury control measures means that the Permit provisions estimate anticipated mercury load reductions for each of these programmatic control measures consistent with an expected level of control measure implementation intensity along with trackable implementation performance metrics to be reported consistent with the stipulated load reductions. Load reductions will be calculated based on the technically sound load reduction accounting methods²⁸⁶ developed and refined during previous permit terms. Many of the control measures may be chosen primarily for the purpose of achieving PCBs load reductions, but mercury load reductions will often result as a tangential benefit (because of possible co-located PCBs and mercury contamination) and should be accounted for.

As discussed below, based on information gained during control measure pilot testing and reported during the previous permit term, mercury load reductions on the order of those anticipated (approximately 10 kg mercury/year) through implementation of control measures required by this Permit are achievable and necessary in order to make progress toward achieving the regionwide urban runoff wasteload allocation of 82 kg/yr (representing a load reduction from all urban runoff sources of approximately 80 kg/yr compared to loads estimated using data collected in 2003) within the 20-year TMDL timeframe. In the sections below, the mercury-specific control measures will be described along with estimates of load reductions resulting from each.

Fact Sheet Findings in Support of Provision C.11

- C.11-1** On August 9, 2006, the Water Board adopted a Basin Plan amendment including a revised TMDL for mercury in San Francisco Bay, two new water quality objectives, and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. C.11 includes components of the Mercury TMDL implementation plan relevant to implementation through the municipal stormwater permit.
- C.11-2** On October 8, 2008, the Water Board adopted a Basin Plan amendment including a TMDL for mercury in the Guadalupe River Watershed (GRW) and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. The GRW mercury TMDL assigns an urban stormwater runoff allocation proportionally equivalent to the mass allocation in the San Francisco Bay mercury TMDL. Accordingly, the GRW urban stormwater runoff mercury allocation is simply the fraction of the Santa Clara Valley Urban Runoff Pollution Prevention Program allocation attributed to the Guadalupe River watershed. The urban stormwater runoff allocation implicitly includes all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas including, but not limited to, California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.
- C.11-3** The 2003 load of mercury from urban runoff was estimated to be 160 kg/yr, and the aggregate WLAs for urban runoff is 82 kg/yr. The mercury TMDL provides as follows:

“[The WLAs] shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and [Caltrans]. The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, ‘source category’) including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

The allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between

the current load and the allocation, should be achieved within 10 years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.

The NPDES permits for urban runoff management agencies shall require the implementation of BMPs and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to humans and wildlife.

Requirements in the permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff and remain consistent with the section of the Basin Plan chapter titled, Surface Water Protection and Management—Point Source Control—Stormwater Discharges. The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.

Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;

Continue to develop and implement a mercury source control program;

Implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

Monitor levels of methylmercury in discharges [Note: this requirement was satisfactorily accomplished during MRP 1 and is not included in the Permit.];

Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal areas;

Develop an equitable allocation-sharing scheme in consultation with Caltrans to address Caltrans roadway and non-roadway facilities in the program area, and

report the details to the Water Board [Note: Caltrans has mercury-related requirements in its draft permit pursuant to this requirement.]);

Prepare an Annual Report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and

Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in [individual WLAs (see Table 4-w of the Basin Plan)], by using one of the following methods:

Quantify the annual average mercury load reduced by implementing

Pollution prevention activities, and

Source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.

Quantify the mercury load as a rolling 5-year annual average using data on flow and water column mercury concentrations.

Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an

allocation, load reduction, and/or other regulatory requirements for the source in question.”

- C.11-4** Loading estimates using recently available data suggest that the urban runoff mercury loading to San Francisco Bay is on the order of 115 kg/yr (McKee and Yee 2015²⁸⁴). While this figure is based on environmental data and thus has inherent uncertainty associated with it, it suggests that current mercury loading is approximately equal to the interim TMDL loading milestone (to be reached at the half-way point of TMDL implementation, 2017) of 120 kg/yr. If mercury loads can be reduced by approximately 35 additional kg/yr, urban runoff loading would meet the TMDL wasteload allocation.
- C.11-5** Mercury is distributed more uniformly throughout the urban landscape than PCBs. For example, loading from older industrial and other polluted source areas accounts for only 6% of the average annual mercury load, but these areas account for over 50% of the average annual PCBs load (McKee and Yee 2015). The likely stronger role of atmospheric deposition in the case of mercury, which may account for up to 50% of the mercury found in urban runoff, is part of the reason for the more uniform mercury distribution in the landscape (McKee and Yee 2015).
- C.11-6** Monitoring data indicate that, while not always the case, watersheds with high PCBs concentrations often contain high or moderately high mercury concentrations (McKee and Yee 2015). Therefore, control strategies focused on finding and managing PCBs-contaminated drainages will often yield mercury load reduction benefits as well.
- C.11-7** This provision is consistent with a 2014 U.S. EPA memorandum²⁸⁵ providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear and concrete milestones and deadlines (see Provision C.11.a.iii) for the activities associated with achieving mercury load reductions as well as other requirements (see Provision C.11.b-h.), necessary to achieve receiving water limits of this permit term relative to the mercury TMDL WLA.

²⁸⁴ McKee, L.J. and Yee, D., 2015. *Sources, Pathways and Loadings: Multi-Year Synthesis. A technical report prepared for the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP), Sources, Pathways and Loadings Workgroup (SPLWG), Small Tributaries Loading Strategy (STLS)*. San Francisco Estuary Institute, Richmond, California.

²⁸⁵ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum “Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs”

Specific Provision C.11 Requirements

Background: The specific requirements in C.11 require Permittees to implement effective control measures to implement the urban runoff requirements from the San Francisco Bay mercury TMDL and achieve mercury load reductions. Permittees must quantitatively document the estimated load reductions achieved through use of the accounting scheme developed and refined during the Previous Permit.

The largest reductions in mercury loads in the urban environment will come from the collection of and recycling of mercury-containing devices, and these activities are, in fact, required by household hazardous waste and producer responsibility laws. Most of the *readily controllable* mercury loads one finds in the urban environment originate in these products, and so eliminating these sources of mercury for subsequent transport is an important and effective strategy for mercury load reductions.²⁸⁹

As previously mentioned (in Fact Sheet section C.8), mercury is much more evenly distributed in watersheds than are PCBs so there are fewer opportunities to find and address heavily contaminated (with mercury) sites to achieve substantial, short-term load reductions. Both PCBs and mercury are, however, transported attached to sediment particles so many of the same control measures that capture sediment (e.g., green stormwater infrastructure, other treatment control, trash capture devices, routing stormwater to treatment facilities) will be effective in reducing loads for both contaminants. Consequently, much of the additional benefit to reduce mercury urban runoff loads will come from a combination of proper disposal and management of mercury containing products as well as much more extensive treatment elements (e.g., green infrastructure) incorporated into the stormwater infrastructure.²⁸⁹ Because PCBs are more concentrated in some locations, the choice of where to implement control measures may be more influenced by known areas of PCBs contamination. However, the mercury removal benefit can be an important contribution to overall mercury load reductions, and available data indicate that this strategy of focusing on PCBs will yield mercury load reductions in many circumstances.

Another reason that control measure implementation tends to focus on addressing PCBs is that the scale of urban runoff load reductions required by the PCBs TMDL (about 90 percent) is far greater than that required by the mercury TMDL (about 50 percent). Moreover, recent loading estimates suggest that current mercury loading to the Bay is at or below the interim loading milestone established in the TMDL.

Provision C.11.a requires Permittees to assess mercury load reductions through use of a previously-developed assessment methodology and data collection program²⁸⁶ to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required

²⁸⁶ *Source Control Load Reduction Accounting for Reasonable Assurance Analysis* (January 2022). Prepared for Bay Area Storm Water Management Agencies by Geosyntec Consultants.

by the provisions of this Permit. As Permittees gain implementation experience and collect information on this implementation, they may request refinement of the accounting system for use in subsequent permit terms.

Permittees are encouraged to build on the loads assessment framework developed in previous permit terms and refine the load assessment methodologies if appropriate. This could include updating and, in some cases, extending the framework presented in that document, justifying assumptions and selected parameters used for each type of control measure, and indicating what information will be collected and submitted to calculate the load reduction for each implemented control measure. The accounting scheme submitted (if necessary) near the end of the permit term (for use in subsequent permits) must be submitted for Executive Officer approval. For more information, please see the discussion under Provision C.12.a, below.

Provision C.11.a also requires Permittees to submit documentation confirming that all control measures initiated or implemented during the previous permit term for which ongoing load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction. Examples of this include the enhanced operation and maintenance activities associated with source property referrals, green stormwater infrastructure implementation, trash collection devices with mercury and PCBs-reduction benefit, and other control measures. Appropriate documentation may include dated photographic evidence, maintenance records, and other types of relevant records showing that the control measures continue to be implemented in a manner consistent with the load reduction credit established when they were initiated.

Provision C.11.b requires Permittees to investigate land areas (general older industrial land use areas) that may contribute mercury to MS4s. For those properties or land areas found to be contributing substantial amounts of mercury or where high mercury concentrations are found (generally areas with sediment concentrations greater than 0.5 mg mercury/kg), this provision element requires Permittees to take actions to abate the mercury sources into their MS4s or refer the properties to the Water Board for follow-up measures. Historical monitoring data suggest that mercury concentrations on or near source properties are similar to those found in urban areas in general so identification of source properties for referral is more likely to be based on presence of high PCBs concentrations (generally 0.5 mg PCBs/kg) alone. Please see the discussion under C.12.b for more information about development of the accountability and load reduction estimate methodology.

A logical performance metric for the source area investigations required by Provision C.11.b is the number of acres of investigated relevant (old industrial) land area. These types of investigations have been performed by the programs for over a decade so there is a basis to establish a reasonable pace for investigations.

In selecting a performance metric for the pace of source property investigations during MRP 3, the following criteria are applied:

- Take into consideration the pace of past investigative efforts. This is consistent with the Basin Plan's requirement that the permit must include TMDL WLA implementation provisions based on an updated assessment of best management practices and control measures intended to reduce mercury in urban stormwater runoff to the maximum extent practicable.
- Endeavor to bring the countywide programs to similar levels of completion (of source property investigation) by the end of the permit term.
- Establish regular, clearly presented, enforceable, non-contingent milestones and deadlines for compliance.

All countywide programs have performed desktop screening of their old industrial land use to remove low-likelihood areas from consideration. Thus, the remaining acres of old industrial land use must be actively investigated, often requiring sampling of sediment or stormwater to find possible source properties. The programs have been, over the last (approximately) 10 years, performing active investigations (Landuse Summary²⁸⁷) at varying paces. These amounts of land area actively screened can be compared to the amount of land area that originally required investigation, and a percent completion can be computed. The percent completion of these active investigations ranges from 11 to 98 percent among the countywide programs.

- Santa Clara: 4,214 acres investigated (of 5,127, 82 percent of total requiring investigation)
- San Mateo: 2,869 acres investigated (of 4,280, 67 percent of total requiring investigation)
- Alameda: 753 acres investigated (of 6,746, 11 percent of total requiring investigation)
- Contra Costa: 976 acres investigated (of 5,005, 20 percent of total requiring investigation)
- Solano: 1,075 acres investigated (of 1,096, 98 percent of total requiring investigation)

From these data, the average of the investigatory pace of the two fastest programs is 1700 acres in a period of five years, and this pace constitutes the baseline pace for source property investigations for MRP 3. Provision C.11.b requires a slightly faster pace for those programs that would not reach at least 50 percent completion by the end

²⁸⁷ Source Property Investigation Summary with Performance Metric Calculation (5-14-21). Data Submitted by BASMAA.

of the permit term if they merely achieved the baseline pace. Therefore, the required pace for source property investigations during MRP 3 is the greater of:

- (1) A number of acres such that at least 50 percent of the initial amount of old industrial land use requiring investigation (desktop excluded) will be investigated, OR
- (2) a baseline pace of 1,700 acres.

According to this performance metric, the programs will complete the following investigations and have the following percent completion by end of MRP 3.

- Santa Clara: 913 acres during MRP 3
 - for total of 5,127 acres, 100 percent of total requiring investigation by end of MRP 3
- San Mateo: 1,411 acres
 - for total of 4,280 acres, 100 percent of required by end of MRP 3
- Alameda: 2,620 acres
 - for total of 3,373 acres, 50 percent of required by end of MRP 3
 - requires pace above baseline
- Contra Costa: 1,700 acres
 - for total of 2,676 acres, 53 percent of required by end of MRP 3
- Solano: 21 acres
 - for total of 1,096, 100 percent of required by end of MRP 3

Summing the required acreage for source property investigations for the countywide programs results in a total of 5,752 acres to be investigated during MRP 3. Making the conservative assumption that the rate of referral (acres referred:acres investigated) will be one-third of the historical ratio of acres referred:acres investigated for each program during MRP 3, approximately 147 acres of source properties will be referred for follow-up action during the MRP 3 permit term.

A simple approach for estimating the load reductions associated with certain control measures involves use of a land-use pollutant yield. A land-use yield is an estimate of the mass of a contaminant contributed by an area of a particular land-use per unit time. Essentially, different types of land uses yield different amounts of pollutants because land use types differ in their degree of contamination resulting from differing intensities of historical or ongoing use of pollutants in those land uses. For example, PCBs were more heavily used in older industrial areas so older industrial land use areas yield a much higher mass of PCBs per unit area than newer urban land use areas where PCBs

were never intensively used. However, this is generally not the case for mercury, where uses were more widespread. This more widespread use and the greater role of atmospheric deposition for mercury in determining the distribution of contamination reduces the likelihood of finding areas with high concentrations of mercury.

Estimated load reductions for source property referral are based on the expectation that the source property will yield less mercury upon cleanup such that the mercury yield will be more like the yield from older commercial areas rather than older industrial areas. For example, when contaminated areas are newly or redeveloped, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). There may be some mercury load reduction from source property referral (which is mainly based on PCBs contamination), but this can be determined on a case-by-case basis provided that pre-cleanup sediment concentration data are available and greater than the typical yield in old industrial, old commercial, and old residential areas of about 50 mg mercury/acre/year.²⁸⁶

Contaminated properties often have a “halo” of contamination in the vicinity of the property, and contaminated sediments in this halo can be transported to receiving waters through the stormwater conveyance system. Further, pollutants from the source area may continue to be transported offsite while remediation occurs. Therefore, implementing enhanced O&M both in areas immediately adjacent to the source area and onsite (to prevent offsite migration) while the source property is being remediated is a priority to prevent PCBs or mercury transport to receiving waters. If enhanced O&M measures are not implemented in the immediate vicinity of the referred property, the calculated load reduction will be recognized upon completion of the cleanup project. In order to confirm effective implementation of enhanced O&M plans to address the prevention of pollutants migrating offsite and the “halo” of contamination in the vicinity of the contaminated property, the Permit requires that these plans be submitted to Water Board staff for review and acceptance prior to the referral.

Provision C.11.c requires Permittees to implement control measures (treatment controls, diversion to wastewater treatment plants, or enhanced operation and treatment controls) on 2,580 acres of old industrial land use (see below for more information on this performance metric). Note that this provision is identical to Provision C.12.c, and that the choice of locations for control measures will often be based on PCBs concentrations, and that mercury-related load reduction benefits will, therefore, be largely coincidental. However, there are locations of high mercury concentrations that provide good opportunities for control measure implementation. In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence moderate to high PCBs soil concentrations (generally sediment concentrations greater than 0.3 mg Hg/kg or greater than 0.2 mg PCBs/kg, approximately the 75th percentile concentrations of these pollutants in old industrial areas). These concentrations should not be considered a “bright line” as there are likely

areas of moderate contamination for these pollutants just under these concentrations that would still be good locations for implementation, especially if these locations have a large reservoir of readily transportable, moderately contaminated sediment. Moreover, the available data have uncertainty so a measured concentration under but near 0.3 mg Hg/kg or 0.2 mg PCBs/kg may indicate an area of moderate contamination such that additional monitoring would reveal concentrations higher than these thresholds. Permittees have discretion to choose control measures appropriate to the circumstances. The reason that PCBs concentrations will be generally be more useful for selecting locations is that it is easier to find old industrial areas that are highly elevated in PCBs concentrations than it is to find areas highly elevated in mercury. As an illustration, in over 1,200 sediment samples collected in old industrial areas, the 90th percentile PCBs concentration was 22 times higher than the median. In other words, the more contaminated areas are much more contaminated than the typical (median concentration) value. By contrast, the 90th percentile mercury concentration in over 1,000 samples collected in old industrial areas was only five times higher than the median.²⁸⁶ See Fact Sheet section for Provision C.12.c for more information and background on this provision element.

As stated previously, all countywide programs have performed desktop screening of their old industrial land use areas. From this information, we can estimate the extent of old industrial land use that may benefit from treatment or other control measures to address the moderately high PCBs and mercury contamination. In the information submitted by the counties, this area is the amount of old industrial land use in 2002 minus the amount redeveloped since 2002 minus the amount not draining to MS4 (see Landuse Summary²⁸⁷). The sum of these areas for each county is as follows.

- Santa Clara: 6,647 acres
- San Mateo: 4,450 acres
- Alameda: 9,374 acres
- Contra Costa: 11,199 acres
- Solano: 1,426 acres

These sum to 33,100 acres for the MRP Permit area. The performance metric for MRP 3 is to implement treatment or other controls on 2,580 acres (which represents just less than 8 percent as currently understood) of this old industrial land use across the entire MRP area. Applying the mercury yield from old industrial area (60 mg mercury/acre/year) to this area and a 70 percent treatment efficiency (efficiency factor for green infrastructure or retrofit treatment control²⁸⁸), the expected mercury load reduction by the end of the permit is 108 grams/year. It is important to note that the

²⁸⁸ Geosyntec Consultants (2017). *Interim Accounting Methodology for TMDL Loads Reduced*. Prepared for Bay Area Stormwater Management Agencies Association.

performance metric is expressed as an amount of old industrial land use to address with control measure implementation or, equivalently, the calculated amount of load reduction from this implementation. With our current understanding of the amount of old industrial land use in the region, the areal performance metric is 2,580 acres of old industrial land use throughout the region. The expected scale of implementation (2,580 acres throughout the region) is very similar to the anticipated level of effort for Caltrans in the SF Bay Region, in which Caltrans will implement treatment controls on approximately 11 percent of their 27,000 acres of right-of-way for a total of more than 2,900 acres (draft Caltrans permit). Permittees may provide updated information concerning the actual amount of old industrial land use, and this amount may differ from the 33,100-acre estimate used here. For example, some of this land use may drain directly to the Bay or may not drain to MS4s. If the amount of old industrial land use is reduced with such new information, it may be the case that the old industrial acreage performance metric may constitute greater than 8 percent of the remaining old industrial land use. The performance metric was designed in part based on the level of effort expected of Caltrans in their draft permit and also to make meaningful progress in addressing old industrial land use, thereby reducing loads of mercury and PCBs. The fact that the acreage represents 8 percent of old industrial land use (as currently understood) is coincidental.

The performance metric (acreage to be addressed by the end of the permit term or corresponding estimated load reduction) can also be shown by county along with the estimated mercury load reductions (for 70 percent control measure efficiency, e.g., retrofit treatment control measures) are as follows:

- Alameda County: 664 acres (28 grams/yr)
- Contra Costa County: 664 acres (28 grams/yr)
- San Mateo County: 445 acres (19 grams/yr)
- Santa Clara County: 664 acres (28 grams/yr)
- Solano County: 142 acres (6 grams/yr)

Compliance with the provision element can be accomplished in one of two ways. Permittees within the county can implement control measures on the listed amount of old industrial land use (assuming 70 percent control measure efficiency, amounts could vary depending on efficiencies of control measures actually implemented) or account for the mass reduction of mercury shown in parentheses. These are equivalent performance metrics because the mass reductions were calculated using the listed old industrial acreage multiplied by the old industrial mass yield and 70 percent efficiency for control measures. For example, consider a county that must address 1,000 acres of old industrial land use when implementing control measures with an efficiency of 70 percent (for a load reduction of 42 grams of mercury). If this county chose instead to implement only control measures with 20 percent efficiency (e.g., efficiency of

hydrodynamic separators), the required acreage would be: 1,000 acres x (70% / 20%) = 3,500 acres. However, the load reduction would be calculated as 3,500 acres x 60 mg mercury/acre/year) x 20% treatment efficiency, or 42 grams of mercury.

If treatment control systems are used, they must be designed and sized consistent with Provision C.3.d(2) (Numeric Sizing Criteria for Stormwater Treatment Systems). Because of the higher removal efficiency of wastewater treatment facilities, each acre treated by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements. This factor is based on the fact²⁹⁵ that wastewater treatment facilities remove well over 90 percent of suspended sediment particles (to which mercury and PCBs are attached), and the ratio of 0.9 to 0.7 is 1.3. Conversely, if control measures having less than 70 percent efficiency are implemented, the acreage credited will be proportional to the ratio of efficiencies (e.g., acreage credited in the ratio of 0.5/0.7 for control measures with 50 percent efficiency – see example calculation above).

Provision C.11.d requires Permittees to promote, facilitate, and/or participate in collection and recycling of mercury containing consumer products, devices, and equipment (e.g., thermometers, thermostats, switches, bulbs) and report on the amount of material recycled and approximate mass of mercury in this material. The load reduction accounting system²⁸⁶ contains methodologies developed for estimation of such quantities. Collection and recycling of mercury containing devices are vital to reducing urban runoff mercury loads from the urban environment because of the large amount of mercury contained within such devices.

In the Bay Area, households and small businesses use about 1.8 million fluorescent bulbs annually, and large businesses use 10.2 million annually.²⁸⁹ The number of bulbs available for recycling each year ranges from 3 to 16 million. Recycled bulbs are estimated to be largely tube lamps, which have an average amount of mercury per tube of 21.4 mg. If fluorescent bulbs, which contain mercury, are broken, it is possible for some of the mercury to volatilize and enter the environment. Some of the volatilized mercury may later become attached to particulates and be deposited, via wet and dry deposition, onto the ground or directly onto the Bay. During wet weather, some of this sediment containing mercury can be mobilized, enter the stormwater system, and potentially be conveyed to the Bay. If bulbs are properly disposed of and recycled, much less mercury enters the Bay.²⁸⁹ Thermostats are a smaller potential source of mercury in that there is approximately 9.3 kg of mercury contained in the 1,500 thermostats recycled in 2006. However, if these devices are not properly disposed of, the mercury from thermostats can also be transported to receiving waters via the same processes described for fluorescent bulbs. Since 2006, California's Universal Waste Rule has

²⁸⁹ Geosyntec Consultants (2010). *Desktop Evaluation of Controls for Polychlorinated Biphenyls and Mercury Load Reduction*. SFEI Contribution 613

prohibited landfill disposal of mercury-containing products (fluorescent tubes, switches, and thermostats). These waste products must be separated and properly recycled.

The Desktop Evaluation²⁸⁹ estimates that the amount of mercury load reduction (mercury prevented from reaching receiving waters) achieved through recycling fluorescent bulbs increases from about 2.4 kg mercury/yr in 2010 to 13 kg mercury/yr by 2030. The same report estimates that the amount of mercury load reduction from thermometer recycling increases from 0.8 to 2.4 kg mercury/yr between 2010 and 2030. Interpolating these load reduction estimates, one calculates that, by the end of MRP3, approximately 8.8 kg mercury/yr load reduction will result from fluorescent tube recycling and 1.3 kg mercury/yr load reduction from thermostat recycling.

Provision C.11.e requires Permittees to implement green infrastructure projects during the term of the Permit at a level consistent with the requirements in Provision C.3.j. The Previous Permit required Permittees “to develop RAAs to estimate the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040.” The analysis and resulting estimates for acres treated and mercury load reductions are contained in the Annual Reports for the countywide programs submitted in Fall 2020. Interpolating between the 2020 and 2030 results provides an estimate for the acreage and mercury load reductions resulting from green infrastructure implementation by 2025:

- | | | |
|----------------------------|-------------|---------|
| • Alameda County: | 1,230 acres | 35 g/yr |
| • Contra Costa County: | 950 acres | 25 g/yr |
| • San Mateo County | 314 acres | 8 g/yr |
| • Santa Clara County | 856 acres | 21 g/yr |
| • Solano County Permittees | 821 acres | 19 g/yr |

The Santa Clara County and San Mateo RAAs did not include green stormwater infrastructure load reduction estimates for mercury. The average mercury load reduction per acre of implemented green infrastructure from Alameda, Contra Costa, and Solano was multiplied by the acres of planned green stormwater infrastructure implemented in these two counties to generate an estimated load reduction. Summing these estimated load reductions across countywide programs results in a regionwide total estimated mercury load reduction from green stormwater implementation of about 108 g/yr by the end of the permit term. Please see the discussion under Provision C.12.f for more information how modeling was used to develop the accountability and load reduction estimate methodology for GSI.

Available information suggests that mercury is distributed more uniformly throughout the Bay Area landscape than is the case for PCBs. Therefore, a focus on highly or even moderately contaminated areas (with mercury) may not be enough to achieve the TMDL-required load reductions. A significant component of the overall strategy to

reduce urban runoff mercury loads will be the implementation of green infrastructure control measures to intercept mercury-containing sediment and stormwater before it is discharged to receiving water. However, the planning, financing and implementation of green infrastructure is going to take a long time, perhaps as much as 25 years or more. This also means that the load reduction benefits of such implementation will also be realized over an extended time frame.

Provisions C.11.f requires Permittees to update (as needed) the plans and schedules prepared during the previous permit for mercury control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations. The updates should focus on those control measures for which new information is available and for control measures not evaluated in previous efforts. The Permit requires that these plans must: identify all technically and economically feasible mercury control measures (including green infrastructure projects) to be implemented; include a schedule according to which these technically and economically feasible control measures will be fully implemented; and provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.

Provision C.11.f also requires Permittees to submit information to inform mercury-related requirements in the subsequent permit term. Namely, Permittees must identify all specific control measures to be implemented along with the expected intensity (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied, etc.) of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term.

The mercury TMDL anticipated the challenge of achieving the urban runoff mercury load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that:

3. *“the Water Board will consider modifying the schedule for achievement of the load allocations for a source category or individual discharger provided that they have complied with all applicable permit requirements and all of the following have been accomplished relative to that source category or discharger:*
 - *A diligent effort has been made to quantify mercury loads and the sources of mercury and potential bioavailability of mercury in the discharge;*
 - *Documentation has been prepared that demonstrates that all technically and economically feasible and cost-*

effective control measures recognized by the Water Board as applicable for that source category or discharger have been fully implemented, and evaluates and quantifies the comprehensive water quality benefit of such measures;

- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.”*

Provision C.11.f provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. The load reductions for mercury are difficult and time-consuming to achieve because mercury is distributed relatively uniformly throughout the urban landscape, and there are few areas of substantial contamination to address in an aggressive fashion. Proper recycling and disposal of mercury-containing materials (Provision C.11.d) will continue to play an important role in reducing mercury loads in urban runoff. The RAAs submitted during the previous Permit Term emphasize that expected mercury load reductions will come from long-term implementation of control strategies (like source control, cleanup of contaminated sites, green infrastructure, and others) that extend beyond the current implementation timeframe of the TMDL. The updates to the long-term plans and schedules required by this provision could potentially support an amendment to TMDL implementation timeframe.

Provision C.11.g. There are still uncertainties surrounding the magnitude and nature of mercury reaching the Bay in urban runoff and the ultimate fate of such mercury, including biological uptake. Provision C.11.g requires that Permittees ensure that fate and transport studies of mercury in urban runoff are completed. The specific information needs include understanding the in-Bay transport of mercury discharged in urban runoff, the sediment and food web mercury concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web mercury accumulation, especially in Bay margins, and the identification of drainages where urban runoff mercury are particularly important in food web accumulation.

Provision C.11.h requires actions to mitigate human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish to be aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in a previous permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.12. PCBs Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs wasteload allocations established for the TMDL. In order to make substantial progress, Permittees must implement PCBs control measures strategically during this permit term. Moreover, aggressive control measure implementation combined with thoughtful planning for the future (see Provision C.12.h) are conditions that must be satisfied before the Water Board can consider an implementation timeframe longer than the 20 years provided in the TMDL.

The C.12 requirements follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)). Accordingly, they build on understanding gained during the Previous Permit term, during which Permittees were required to implement PCBs control measures (source control, treatment control and/or pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and to report on the loads reduced through implementation of those control measures.

In this Permit term, the PCBs provision requires specific programmatic control measures deemed effective based on implementation experience and analyses in previous permit terms implemented at full-scale (a “programmatic approach”). For PCBs, these control measures include: source property identification and abatement, control measure implementation in old industrial areas, controlling PCBs in stormwater infrastructure, controlling PCBs from electrical utilities, green stormwater infrastructure, and managing PCBs-containing material during building demolition.

The programmatic approach to PCBs control measures means that the Permit provisions estimate, based on calculations, anticipated PCBs load reductions for each of these programmatic control measures consistent with an expected level of control measure implementation intensity along with trackable implementation performance metrics to be reported consistent with the estimated load reductions. Load reductions will be calculated based on the technically sound load reduction accounting methods²⁸⁶ developed and refined during previous permit terms.

As discussed below, based on information gained during control measure pilot testing and reported during the Previous Permit term, load reductions on the order of those anticipated (approximately 1.47 kg PCBs/year) through implementation of control measures required by this Permit are achievable and necessary in order to make progress toward achieving the regionwide urban runoff wasteload allocation of 2 kg/yr (representing a load reduction from all urban runoff sources of approximately 18 kg/yr compared to loads estimated using data collected in 2003) within the 20-year TMDL timeframe. Further, load reductions resulting from a variety of PCBs control measures may be feasibly calculated in a straightforward manner (see below) and a clear

accountability metric against which to evaluate the sufficiency of control measure implementation can be applied.

The area covered by the Permit (permit area) is smaller than the region that discharges to the Bay. The discharges in the permit area have been allocated 1.6 kg/yr of the total 2 kg/yr wasteload allocation and the total load reductions required from Permittees in the permit area during TMDL implementation is 14.4 kg/yr of the 18 kg/yr regionwide total.

Fact Sheet Findings in Support of Provision C.12

- C.12-1** On February 13, 2008, the Water Board adopted a Basin Plan amendment establishing a TMDL for PCBs in San Francisco Bay and an implementation plan to achieve the TMDL. U.S. EPA approved the TMDL on March 29, 2010.
- C.12-2** The following excerpts from the TMDL implementation plan are relevant to implementation of the municipal stormwater permit:

“The 2003 load of PCBs from urban runoff is 20 kg/yr, and the aggregate WLAs for urban runoff total 2 kg/yr. Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities ... shall reduce PCBs in stormwater runoff to the maximum extent practicable....

In the first five-year permit term, stormwater Permittees will be required to implement control measures on a pilot

scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater Permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost-efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.”

- C.12-3** Urban runoff management agencies have a responsibility to oversee various discharges within the agencies’ geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question. If these sources are contributing to urban runoff loads (as opposed to direct Bay discharge), load reductions from these sources will count toward meeting the urban runoff wasteload allocations.
- C.12-4** Some PCB congeners have dioxin-like properties. Dioxins are persistent, bioaccumulative, toxic compounds that are produced from the combustion of organic materials in the presence of chlorine. Dioxins enter the air through fuel and waste emissions, including diesel and other motor vehicle exhaust fumes and trash incineration, and are carried in rain and contaminate soil. Dioxins bioaccumulate in fat, and most human exposure occurs through the consumption of animal fats, including those from fish. Therefore, the actions

targeting PCBs will likely have the simultaneous benefit of addressing a portion of the dioxin impairment resulting from dioxin-like PCBs.

- C.12-5** Estimates using the latest available data suggest that the urban runoff PCBs loading to San Francisco Bay is on the order of 19 kg/yr (McKee and Yee 2015). While this figure is based on environmental data and thus has inherent uncertainty associated with it, it agrees very well with the regional urban runoff load estimate of 20 kg/yr provided in the TMDL report.
- C.12-6** Studies suggest that PCBs load reductions of approximately 6 kg/yr are possible by 2030 through control measures like street sweeping, control of PCBs during building demolition and renovation, drop inlet cleaning, treatment retrofits, redevelopment of contaminated areas, pump station diversion, and street flushing (McKee and Yee 2015²⁸⁴). While there are substantial uncertainties associated with these estimates, these results suggest that a substantial portion of the additional load reductions (~ 12 kg/yr) necessary to achieve the PCBs TMDL may need to come from identification and cleanup of PCBs-contaminated properties.
- C.12-7** The distribution of PCBs in the urban landscape is much more variable than it is for mercury. For example, data indicate that PCBs-contaminated land uses yield perhaps 800 times more PCBs per unit area compared to the least contaminated land uses. By contrast, there is a 70-fold difference between the highest and lowest yielding land uses for mercury (McKee and Yee 2015). A large proportion (about 53 percent) of annual average urban runoff PCB loading is likely coming from old industrial or other contaminated areas (McKee and Yee 2015).
- C.12-8** A significant recent accomplishment of the Sources, Pathways, and Loadings workgroup (SPLWG) of the Regional Monitoring Program has been the development and refinement of a Regional Watershed Spreadsheet Model (RWSM). This GIS-based model estimates relative land use and source area yields, and integrates them to provide a transparent, mutually accepted, and peer-reviewed analysis of relative watershed scale yield. Outputs from model runs to date suggest yields for the most polluted watershed in excess of 1,000 g/km² for PCBs and mercury and a variation between watersheds of ~100,000-fold for PCBs and ~200-fold for mercury. To date, modeling results have a large amount of uncertainty in terms of absolute magnitude, but the results are capturing the patterns of contaminant distribution and transport. The model output is generally consistent with what is known about the distribution of these contaminants in the landscape from stormwater and bedded sediment data. The results are also consistent with what monitoring data tell us about the relative mercury and PCBs loads from land use and source area categories. The SPLWG is currently developing a more sophisticated dynamic watershed loading model that will provide a much better modeling tool to predict

watershed scale loads of PCBs and other contaminants under a variety of management scenarios.

- C.12-9** Sufficient information is available to establish default factors for PCBs load reduction credit resulting from foreseeable control measures implemented during this permit term (see information under Provision C.12.a, below). For treatment controls, the estimated load reductions can be calculated by multiplying the assumed land-use PCB yearly mass yield by the treated area and by a treatment efficiency factor. The load reduction resulting from cleaning up contaminated properties can be estimated by recognizing that the yield of the contaminated property will be reduced to an assumed background level over the course of site cleanup. The load reduction resulting from controlling PCBs in building materials during demolition can be estimated by estimating the amount of PCBs in the building, the fraction of those PCBs that would enter the storm drain system in the absence of controls, and the efficiency of control measures applied to the demolished building to prevent such PCBs release.
- C.12-10** Limited sampling data from Bay Area structures built between 1950 and 1980 suggest that PCB concentrations in caulks here are similar to those in other parts of North America and Europe. Samples collected in about 1,350 buildings in Switzerland constructed between 1950 and 1980 found almost half the buildings contained PCBs in caulk, with most samples containing >100 ppm and 20 percent containing 10,000 ppm or more. In Bay Area samples, 40 percent contained > 50 ppm PCBs and 20 percent contained > 10,000 ppm PCBs. The study estimates that certain types of Bay Area structures built 1950-1980 contain a mid-range average of 4.7 kg PCBs per building. An estimated 6,300 currently standing non-residential buildings in the MRP area were built between 1954 and 1974. The mid-range estimate of the total PCB mass in caulk in these buildings is 10,500 kg.²⁹⁰
- C.12-11** During the Previous Permit, Permittees were required to develop and implement protocols for identifying PCBs-containing structures at the time of demolition so that PCBs do not enter municipal storm drains. Some demolition sites, especially high-profile sites such as hospitals, bridges and sports arenas, comply with federal law (Toxic Substances Control Act) and State regulations (California Code of Regulations Title 22) that require a project proponent to determine the presence of PCBs and other hazardous substances and to follow applicable disposal requirements. Soil sampling data from such demolition projects indicate that significant concentrations of PCBs can be present in site soils. Such PCB-laden sediment, particularly at a demolition site without adequate controls, is transported by vehicle tracking, wind erosion or precipitation runoff to the storm drain. PCBs entering the storm drain system

²⁹⁰ Klosterhaus S. and McKee L. et al. 2014. *Polychlorinated Biphenyls in the exterior caulk of San Francisco Bay Area buildings, California, USA*. *Environment International* 66 (2014) 38–43.

during dry weather are non-stormwater discharges that must be effectively prohibited pursuant to CWA § 402(p)(3)(B)(ii). PCBs that are discharged into storm drain systems and waters of the U.S. through stormwater runoff are appropriate for control in order to make progress in achieving the PCBs TMDL wasteload allocations for urban runoff, pursuant to CWA § 402(p)(3)(B)(iii).

- C.12-12** The protocol for requiring applicable structures to sample for PCBs prior to receiving a demolition permit, developed during the Previous Permit term, allowed for identification of structures that contain PCBs. But the Previous Permit did not allow for collection of information that could demonstrate PCBs were properly disposed so they are not transported to water bodies via the MS4. That shortcoming is addressed in this Permit, for those structures where notification and advance approval from the U.S. EPA is not required. This Permit includes a requirement for Permittees to include in their annual reports verification, such as the hazardous waste manifest prepared for transportation of the material to a disposal facility, that demonstrates proper disposal of the building materials with PCBs concentrations of 50 ppm or greater.
- C.12-13** U.S. EPA has developed guidelines, available at its “Steps to Safe Renovation and Abatement of Buildings That Have PCB-Containing Caulk” website, for identifying and removing PCBs in building materials that can help in the effort to manage PCBs so that they do not enter municipal storm drains. In addition, during the MRP 1 term, starting in 2009, the Permittees participated in the grant-funded “PCBs in Caulk Project”²⁹¹ which addressed potential impacts of PCBs released into stormwater runoff during demolition or remodeling projects in the San Francisco Bay Area. This project fulfilled the permit requirement to investigate the costs, effectiveness, and technical feasibility of PCBs control measures to minimize the release of PCBs in caulks and sealants to stormwater runoff during demolition or remodeling projects. Products developed through this grant-funded project include a fact sheet for developers; a fact sheet on sampling methods; BMPs to control PCBs in caulk at demolition or renovation sites; a Model Implementation Process to incorporate a requirement to use BMPs into the municipal demolition permitting process; a training strategy to train and deploy municipal staff, such as hazardous material or building inspectors, to ensure proper implementation of BMPs; and a technical memorandum on relevant regulations and policies.
- C.12-14** This provision is consistent with a recent U.S. EPA memorandum²⁹¹ providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear and concrete accountability metrics and deadlines for the achievement of specific anticipated PCBs load reductions

²⁹¹ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum “Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs.”

from effective control measures as well as other requirements, necessary to achieve receiving water limits of this permit term relative to the PCBs TMDL WLAs.

Specific Provision C.12 Requirements

Provision C.12.a requires Permittees to assess PCBs load reductions through use of a previously-developed assessment methodology and data collection program²⁸⁶ to quantify PCBs loads reduced through implementation of any and all pollution prevention, source control, and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this Permit. The load reduction assessment methodology is consistent with the PCBs TMDL requirement that *“stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions”* (there is a similar requirement in the SF Bay mercury TMDL). As Permittees gain implementation experience and collect information on this implementation, they may request refinement of the accounting system for use in subsequent permit terms.

The goals of the assessment methodology required in this provision element are two-fold. First, it establishes a system of accountability for control measure implementation with which to measure the sufficiency of control measure implementation intensity. Second, it provides an accounting system that relates control measure implementation intensity with estimated PCBs and mercury load reductions. This allows tracking of implementation intensity to assess compliance rather than having to measure actual load reductions to assess compliance, which is impractical. See discussion above under Provision C.8.f on the special challenges of monitoring PCBs and mercury and also in the introduction to pollutants of concern provisions where we describe the for PCBs and mercury control measure implementation. For each provision element, the Fact Sheet describes how data and information are used to develop the trackable accountability metric and load reduction estimate corresponding to the trackable metric.

Permittees are encouraged to build on the loads assessment framework developed in previous permit terms and refine the load assessment methodologies if appropriate. This could include updating and, in some cases, extending the framework presented in that document, justifying assumptions and selected parameters used for each type of control measure, and indicating what information will be collected and submitted to calculate the load reduction for each implemented control measure. The accounting scheme submitted (if necessary) near the end of the Permit term (for use in subsequent permits) must be submitted for Executive Officer approval.

Provision C.12.a also requires Permittees to submit documentation confirming that that all control measures initiated or implemented during the Previous Permit term for which ongoing load reduction credit was recognized continue to be implemented at an

intensity sufficient to maintain the credited load reduction. Examples of this include the enhanced operation and maintenance activities associated with source property referrals, GSI implementation, trash collection devices with mercury and PCBs-reduction benefit, and other control measures. Appropriate documentation may include dated photographic evidence, maintenance records, and other types of relevant records showing that the control measures continue to be implemented in a manner consistent with the load reduction credit established when they were initiated.

Many of the legacy sources of PCBs are found in Bay margins contaminated by historical industrial activity. These legacy sources may be contributing to storm drain runoff conveyances, but Permittees may have jurisdictional challenges in addressing the sources in private property. In addition, Permittees are responsible for contamination in public rights of way. Permittees are expected to make diligent efforts both to address contamination on public property and to refer source properties to the Water Board for possible cleanup and abatement.

Provision C.12.b requires Permittees to investigate land areas (generally older industrial land use areas) that likely contribute PCBs to MS4s. For those properties or land areas found to be contributing substantial amounts of PCBs or where high PCBs concentrations are found (generally areas with sediment concentrations greater than 0.5 mg PCBs/kg), this provision requires Permittees to take actions to abate the PCB sources into their MS4s or refer the properties to the Water Board for follow-up measures.

Permittees have developed a systematic investigatory process (described in appendix C of the load reduction accounting report²⁸⁶) to identify source properties, and this process includes the following steps:

- (1) Identify areas that should be considered for source area investigations (completed);
- (2) Conduct screening-level investigations using desktop analyses or monitoring data in the areas identified in (1) to prioritize these areas as high, moderate, or low-likelihood source areas;
- (3) Conduct targeted source area investigations (e.g., records review, ROW surveys, site visits, sampling) in areas prioritized as high or moderate likelihood source areas in (2) to identify and confirm source areas; and
- (4) Determine next steps for confirmed source areas.

A useful performance metric for the source area investigations required by Provision C.12.b is the number of acres of investigated relevant (old industrial) land area. These types of investigations have been performed by the programs for over a decade so there is a basis to establish a reasonable pace for investigations. The reason why the Permit uses the acres investigated rather than the acres referred for follow-up action as

the performance metric is that it is not known in advance if the investigation is going to reveal a contaminated property suitable for referral.

In selecting a performance metric for the pace of source property investigations during MRP 3, the following criteria are applied:

- Take into consideration the pace of past investigative efforts. This is consistent with the Basin Plan's requirement that the permit must include TMDL WLA implementation provisions based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff to the maximum extent practicable.
- Endeavor to bring the countywide programs to similar levels of completion (of source property investigation) by the end of the permit term.
- Establish regular, clearly presented, enforceable, non-contingent milestones and deadlines for compliance.

All countywide programs have performed desktop screening of their old industrial land use to remove low-likelihood areas from consideration. Thus, the remaining acres of old industrial land use must be actively investigated, often requiring sampling of sediment or stormwater to find possible source properties. The programs have been, over the last (approximately) 10 years, performing active investigations (Landuse Summary²⁸⁷) at varying paces. These amounts of land area actively screened can be compared to the amount of land area that originally required investigation, and a percent completion can be computed. The percent completion of these active investigations ranges from 11 to 98 percent among the countywide programs.

- Santa Clara: 4,214 acres investigated (of 5,127, 82 percent of total requiring investigation)
- San Mateo: 2,869 acres investigated (of 4,280, 67 percent of total requiring investigation)
- Alameda: 753 acres investigated (of 6,746, 11 percent of total requiring investigation)
- Contra Costa: 976 acres investigated (of 5,005, 20 percent of total requiring investigation)
- Solano: 1,075 acres investigated (of 1,096, 98 percent of total requiring investigation)

From these data, the average of the investigatory pace of the two fastest programs is 1,700 acres in a period of five years, and this pace constitutes the baseline pace for source property investigations for MRP 3. Provision C.12.b requires a slightly faster pace for those programs that would not reach at least 50 percent completion by the end

of the permit term if they merely achieved the baseline pace. Therefore, the required pace for source property investigations during MRP 3 is the greater of:

- A number of acres such that at least 50 percent of the initial amount of old industrial land use requiring investigation (desktop excluded) will be investigated, OR
- a baseline pace of 1,700 acres.

According to this performance metric, the programs will complete the following investigations and have the following percent completion by end of MRP3.

- Santa Clara: 913 acres during MRP 3
 - for total of 5,127 acres, 100 percent of total requiring investigation by end of MRP 3
- San Mateo: 1,411 acres
 - for total of 4,280 acres, 100 percent of required by end of MRP 3
- Alameda: 2,620 acres
 - for total of 3,373 acres, 50 percent of required by end of MRP 3
 - requires pace above baseline
- Contra Costa: 1,700 acres
 - for total of 2,676 acres, 53 percent of required by end of MRP 3
- Solano: 21 acres
 - for total of 1,096, 100 percent of required by end of MRP 3

Summing the required acreage for source property investigations for the countywide programs results in a total of 5,752 acres to be investigated during MRP 3. Making the conservative assumption that the rate of referral (acres referred:acres investigated) will be one-third of the historical ratio of acres referred:acres investigated for each program during MRP 3, approximately 147 acres of source properties will be referred for follow-up action during the MRP 3 permit term. The ratio of acres referred:acres investigated was assumed to be one-third the historical ratio to account for the fact that the easier to find source properties may have already been identified. Therefore, the success rate of finding new source properties as old industrial acres are investigated may decline. The outcome of investigations during MRP 3 can confirm this assumption.

A simple approach for estimating the load reductions associated with certain control measures involves use of a land-use pollutant yield. A land-use yield is an estimate of the mass of a contaminant contributed by an area of a particular land-use per unit time. Essentially, different types of land uses yield different amounts of pollutants because

land use types differ in their degree of contamination resulting from differing intensities of historical or ongoing use of pollutants in those land uses. PCBs were more heavily used in older industrial areas so older industrial land use areas yield a much higher mass of PCBs per unit area than newer urban land use areas where PCBs were never intensively used.

The land use-specific yields were developed by matching the predictions of a watershed model against monitoring data.²⁹² The inputs to the model include: 1) GIS layers identifying the composition of various types of land use in Bay Area watersheds (e.g., old industrial, old commercial, old residential, new urban, agriculture/open space), 2) information about the volume of water and sediment transported to receiving waters from these watersheds, and 3) PCBs and mercury monitoring data in a subset of these watersheds. The adjustable parameters in the model are the concentrations of pollutants in stormwater or sediment from the various types of land uses, and the final values for these concentrations are selected through an iterative process where the model predictions are matched against the actual data, and the values of the land use-specific concentrations are modified until a best solution is found for the water and sediment pollutant concentrations from various land uses that results in the best match with the monitoring data. This process is known as calibration. The resulting yields for water and sediment are simply the model-selected concentrations divided by the total volume of water or sediment originating from each land use type during a typical year divided by the total acreage of that land use type, and these yields are shown in Tables A-5 and A-6 below.

²⁹² Wu, J., Gilbreath, A.N., McKee, L.J., 2016. Regional Watershed Spreadsheet Model (RWSM): Year 5 Progress Report. A technical report prepared for the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP), Sources, Pathways and Loadings Workgroup (SPLWG), Small Tributaries Loading Strategy (STLS). Contribution No. 788. San Francisco Estuary Institute, Richmond, California.

Table A-5. Average PCBs and Mercury Yields by Land Use Category

Land Use Category	Average PCBs Yield (mg/ac/yr)	Average Mercury Yield ¹ (mg/ac/yr)
Old Industrial and Source Areas	259	53
Old Commercial and Old Transportation	49	57
Old Residential	2.8	57
New Urban	0.4	4
Agriculture/Open Space	0.4	81

1 The model calibration for PCBs is reasonable but there remains a lower confidence in the calibration for mercury.²⁹²

Table A-6. Total PCBs and Mercury by Land Use Category

Land Use Category	Total PCBs (mg/ac/yr)	Total Mercury ¹ (mg/ac/yr)
Old Industrial and Source Areas	204	40
Old Commercial and Old Transportation	40	63
Old Residential	4	63
New Urban	0.2	3
Agriculture/Open Space	0.2	80

1 The model calibration for PCBs is reasonable but there remains a lower confidence in the calibration for mercury.²⁹²

Because source properties represent a small fraction of the total Bay Area land use, the above calibration procedure will not work so a separate procedure was used to estimate the PCBs yield from source properties. There are no mercury source properties from which to develop a yield so the yield value for old industrial/source areas will be used for load reduction accounting. The PCBs source property yield (5,078 mg PCBs/acre*year) was derived as the product of a representative PCBs concentration from over 670 PCBs surface soil samples collected at known source properties multiplied by a representative soil/sediment yield for old industrial areas obtained through watershed modeling.

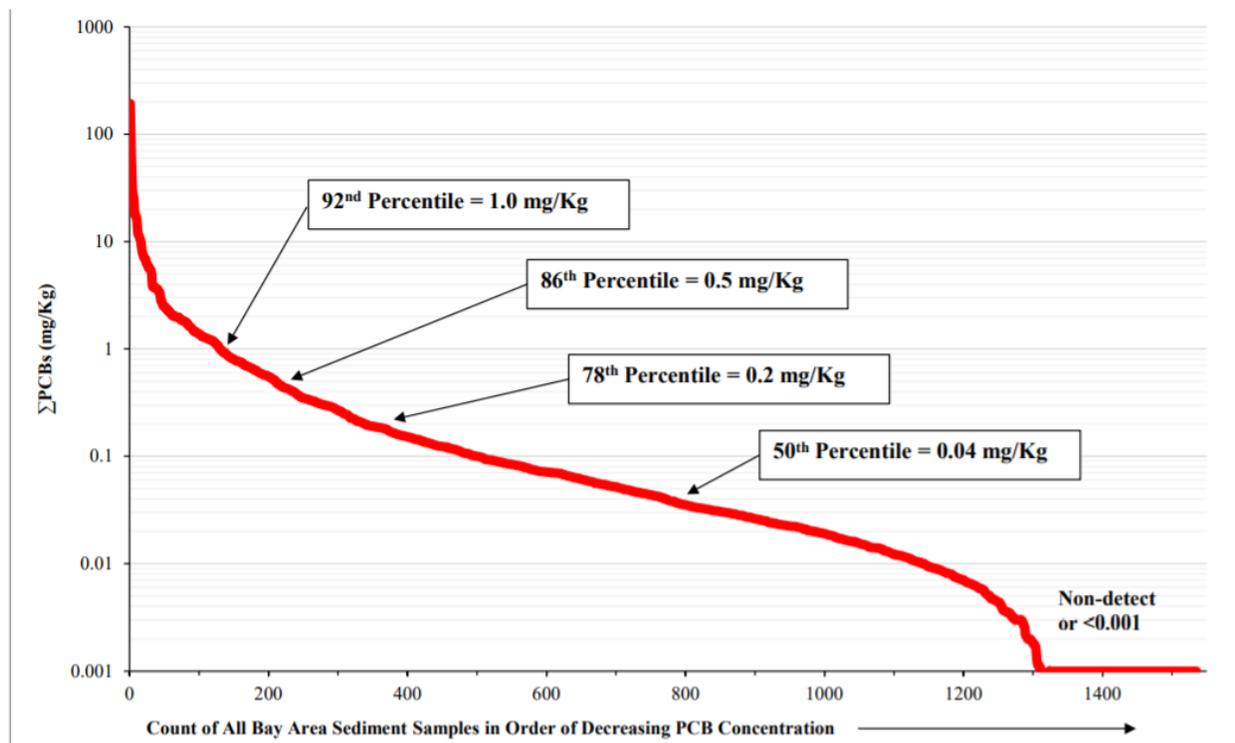
Estimated load reductions for source property abatement or referral are based on the expectation that the source property will yield less PCBs upon cleanup such that the PCBs yield will be more like the yield from older commercial areas rather than older industrial areas. For example, when contaminated areas are newly or redeveloped, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). Accordingly, the amount of reduction can be calculated as the referred-acres multiplied by the difference between the source property yield (5,078 mg PCBs/acre*year²⁸⁶) minus the old commercial yield (49 mg PCBs/acre*year). Therefore, controlling the load from the expected acreage of abated or referred properties will ultimately result in an estimated load reduction of 740 g/yr, one-half of which (370 g/yr) can be recognized during MRP 3 provided that effective enhanced operation and measurement (O&M) measures are implemented to prevent off-site migration and address the contamination in the vicinity of the property due do historical off-site migration of PCBs.

PCBs-contaminated properties often have a “halo” of contamination in the vicinity of the property, and contaminated sediments in this halo can be transported to receiving waters through the stormwater conveyance system. Further, pollutants from the source area may continue to be transported offsite while remediation occurs. Therefore, implementing enhanced O&M both in areas immediately adjacent to the source area and onsite (to prevent offsite migration) while the source property is being remediated is a priority to prevent PCBs transport to receiving waters. If enhanced O&M measures are not implemented in the immediate vicinity of the referred property, the calculated load reduction will be recognized upon completion of the cleanup project. In order to confirm effective implementation of enhanced O&M plans to address the prevention of PCBs migrating offsite and the halo of contamination in the vicinity of the contaminated property, the Permit requires that these plans be submitted to Water Board staff for review and acceptance prior to the referral.

Provision C.12.c requires Permittees to implement control measures (treatment controls, diversion to wastewater treatment plants, or enhanced operation and treatment controls) on 2,580 acres of old industrial land use (see below). In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence moderate to high PCBs soil concentrations (generally sediment concentrations greater than 0.3 mg Hg/kg or greater than 0.2 mg PCBs/kg, approximately the 75th percentile concentrations in old industrial areas). These concentrations should not be considered a “bright line” as there are likely situations of moderate contamination for these pollutants just under these concentrations that would still be good locations for implementation, especially if these locations have a large reservoir of readily transportable sediment at these moderate concentrations. Moreover, the available data have uncertainty so a measured concentration under but near 0.3 mg Hg/kg or 0.2 mg PCBs/kg may indicate an area of moderate contamination such that additional

monitoring would reveal concentrations higher than these thresholds. Permittees have discretion to choose control measures appropriate to the circumstances.

In addition to finding and remediating source areas, there is also a need to address the moderate contamination that exists now and will remain even if source properties are identified and abated or referred for additional action. Below is a plot of data representing more than 1,500 PCBs samples taken within the street right-of-way, storm drain conveyance system, and private properties from 1999 through 2019.²⁸⁶ These data establish a contextual framework to interpret new monitoring data to determine if the new data represent areas of high or moderately high PCBs concentrations. This helps guide decision making for site selection for control measure implementation, especially in old industrial areas. One can see from the figure that there were about 500 of the 1,500 samples with PCBs concentrations over 0.1 mg/kg (approximately 70th percentile of the data) and about 200 samples exceeding 0.5 mg/kg (86th percentile of the data). Areas with moderately high PCBs concentrations (e.g., 0.1-0.5 mg/kg) were found throughout areas where historical industrial activity involved use of PCBs²⁸⁴). In general, Permittees will search for source properties in areas with measured concentrations at or above 0.5 mg/kg and will implement control measures to address residual moderate contamination in areas with measured PCBs concentrations of about 0.2 mg/kg.



Treatment and other control measures focusing on these highly- and moderately contaminated areas form an important element in achieving the PCBs TMDL-required load reductions. It is also important to attend to these old industrial areas because they are generally located near historically disadvantaged communities and reducing PCBs

and other contamination promotes better health for the residents and helps improve quality of life for these communities. Additionally, PCBs from these old industrial areas are transported to the Bay near many popular shoreline fishing locations so popular fish species caught and consumed by anglers fishing from shoreline fishing locations near these old industrial areas generally have high PCBs concentrations.

As stated previously, all countywide programs have performed “desktop” screening of their old industrial land use areas. From this information, we can estimate the extent of old industrial land use that may benefit from treatment or other control measures to address the moderately high PCBs and mercury contamination. In the information submitted by the Permittees, this area is the amount of old industrial land use in 2002 minus the amount redeveloped since 2002 minus the amount not draining to MS4 (see Landuse Summary²⁸⁷). The sum of these areas for each county is as follows.

- Santa Clara: 6,647 acres
- San Mateo: 4,450 acres
- Alameda: 9,374 acres
- Contra Costa: 11,199 acres
- Solano: 1,426 acres

These sum to 33,100 acres for the MRP Permit area. The performance metric for MRP3 is to implement treatment or other controls on 2,580 acres of old industrial land use (which represents slightly less than 8 percent of this old industrial land use area as currently understood) across the entire MRP area. Applying the PCBs yield from old industrial area (259 mg PCBs/acre/year, see discussion under C.12.b for details of derivation) to this area and a 70 percent treatment efficiency (efficiency factor for green infrastructure or retrofit treatment control²⁸⁸), the expected PCBs load reduction by the end of the permit term is 467 g/yr.

It is important to note that the performance metric is expressed as an amount of old industrial land use to address with control measure implementation or, equivalently, the calculated amount of load reduction from this implementation. With our current understanding of the amount of old industrial land use in the region, the areal performance metric is 2,580 acres of old industrial land use throughout the region. Permittees may provide updated information concerning the amount of old industrial land use, and this amount may differ from the 33,100-acre estimate used for this requirement. For example, some old industrial land use may drain directly to the Bay or may not drain to MS4s and thus not properly counted in the total. If the amount of old industrial land use is reduced with such new information, it may be the case that the old industrial acreage performance metric may constitute greater than 8 percent of the remaining old industrial land use. However, it should be clearly understood that the performance metric was designed to make meaningful progress in addressing old industrial land use in terms of the calculated amount of load reduction. The acreage

requirement is the performance metric, not the percentage of remaining old industrial land use addressed.

The performance metric of 2,580 acres of old industrial land use throughout the region is very similar to the anticipated level of effort for Caltrans in the SF Bay Region, in which Caltrans will implement treatment controls on approximately 11 percent of their 27,000 acres of right-of-way for a total of more than 2,900 acres (draft Caltrans permit). The performance metric (acreage to be addressed by the end of the permit term or corresponding estimated load reduction) can also be shown by county along with the estimated PCBs load reductions (for 70 percent control measure efficiency, e.g., retrofit treatment control measures) are as follows:

- Alameda County: 664 acres (121 grams/yr)
- Contra Costa County: 664 acres (121 grams/yr)
- San Mateo County: 445 acres (81 grams/yr)
- Santa Clara County: 664 acres (121 grams/yr)
- Solano County: 142 acres (26 grams/yr)

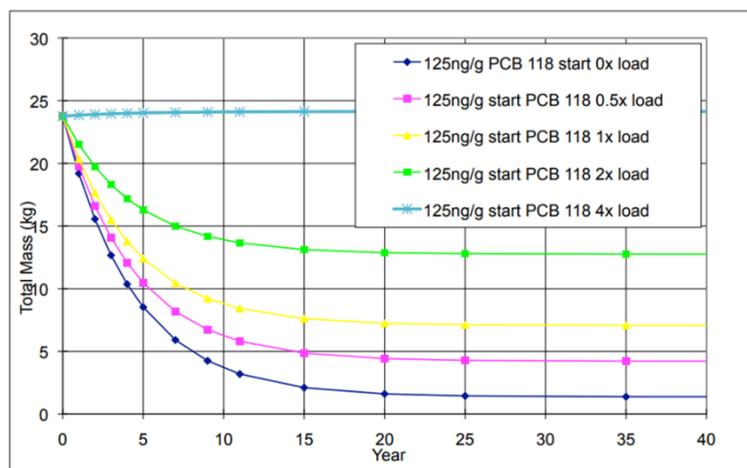
The performance metrics presented in the draft of this Order resulted in large disparities in required implementation effort among the four major countywide stormwater management programs. The Alameda and Contra Costa county performance metrics were substantially greater than those for Santa Clara and San Mateo counties. In order to reduce these disparities in level of effort, the greater of the performance metrics for San Mateo and Santa Clara (664 acres) was assigned both to Alameda and Contra Costa counties. The performance metrics for Solano, Santa Clara and San Mateo counties remain unchanged. With this change, the four large countywide programs have performance metrics of a similar magnitude.

The reduced performance metrics in this Order represent a substantial amount of control measure implementation and PCBs load reduction. According to McKee et al. (2015²⁸⁴), about 1.5 kg PCBs/yr loading originates from old industrial landuse. The original C.11/12.c performance metric acreage in the draft of this Order (3,300 acres) would have resulted in about 600 g/yr load reductions, which represents about 40% of the total from McKee et al. 2015. The revised performance metric (2580 acres of old industrial landuse for entire MRP area) represents about a 31% reduction.

The RMP has funded special studies in four representative "Priority Margin Units", or PMUs. A PMU is a high priority margin area for management and monitoring. The four PMUs are San Leandro Bay (SLB), Emeryville Crescent, Steinberger Slough, and Richmond Harbor. The PMU studies develop conceptual and quantitative models of how PCBs is transported into and through these PMUs. These studies also provide analysis of how the PMUs would respond to load reductions. Because the loads to the PMUs enter a relatively isolated (from Bay influence), the trajectory of recovery is

dominated by what happens to loading directly to the PMU, rather than the overall loading to the Bay as a whole.

The plot below (from the SLB PMU report²⁹³) shows the modeled recovery of PCBs mass in the system, which is a useful proxy for the scale of reductions in biota. The plot shows the trajectory in PCBs mass in SLB if loads to the system are perturbed but suspended sediment concentrations and tidal export rate parameters remain unchanged. For this representative PMU, the one-box model shows substantial declines in the mass of PCBs in the subembayment. For SLB, reducing loads by 50% resulted in about a 50% reduction in the PCBs mass in SLB in about five years according to the model. If other San Francisco Bay margin areas receiving loads (from local urban runoff sources) respond similarly to SLB, load reductions of this magnitude should manifest in reductions in total mass (in local embayments) of approximately the same order of magnitude. This would result in substantially less PCBs available in these receiving waters for uptake into biota, including the fish caught by local anglers. For the Emeryville Crescent PMU, the recovery is not as dramatic according to the modeling, but the Emeryville Crescent PMU report suggests that the dynamic transport in Emeryville Crescent may not be as amenable to application of a box model²⁹⁴.



- Figure showing modeled PCBs recovery trajectory in SLB as a function of reduced PCBs loading to SLB subembayment²⁹³

Compliance with the performance metrics of this provision element can be accomplished in one of two ways. Permittees within the county can implement control measures on the listed amount of old industrial land use (assuming 70 percent control

²⁹³ Conceptual Model to Support PCB Management and Monitoring in the San Leandro Bay Priority Margin Unit – Final Report. Prepared by Donald Yee, Alicia N. Gilbreath, Lester J. McKee, and Jay Davis. San Francisco Estuary Institute. Contribution No. 928. November 2019.

²⁹⁴ Conceptual Model to Support PCB Management and Monitoring in the Emeryville Crescent Priority Margin Unit – Final Report. Prepared by Jay Davis, Donald Yee, Alicia N. Gilbreath, and Lester J. McKee. San Francisco Estuary Institute. Contribution No. 824. April 2017.

measure efficiency, amounts could vary depending on efficiencies of control measures actually implemented) or account for the mass reduction of PCBs shown in parentheses. Control measure efficiencies are stated in the accounting document along with supporting information for the value. These are equivalent performance metrics because the mass reductions were calculated using the listed old industrial acreage multiplied by the old industrial mass yield and 70 percent efficiency for control measures. For example, consider a county that must address 1,000 acres of old industrial land use when implementing control measures with an efficiency of 70 percent (for a load reduction of 181 grams of PCBs). If this county chose instead to implement only control measures with 20 percent efficiency (e.g., efficiency of hydrodynamic separators), the required acreage would be: $1,000 \text{ acres} \times (70\% / 20\%) = 3500 \text{ acres}$. However, the load reduction would be calculated as $3,500 \text{ acres} \times 259 \text{ mg PCBs/acre/year} \times 20\% \text{ treatment efficiency}$, or 181 grams of PCBs.

If treatment control systems are used, they must be designed and sized consistent with Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems). Because of the higher removal efficiency of wastewater treatment facilities, each acre treated by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements. This factor is based on the fact that wastewater treatment facilities remove well over 90 percent²⁹⁵ of suspended sediment particles (to which mercury and PCBs are attached), and the ratio of 0.9 to 0.7 is 1.3. Conversely, as previously stated, if control measures having less than 70 percent efficiency are implemented, the acreage credited will be proportional to the ratio of efficiencies (e.g., acreage credited in the ratio of 0.5/0.7 for control measures with 50 percent efficiency). As an example, full-trash capture systems will remove some particles (and hence PCBs), and these have an efficiency of about 20 percent so the acreage credited for these systems will be in the ratio of 0.2/0.7). The PCBs in sediment data described above were also analyzed to determine land-use specific sediment concentrations. For example, the average PCBs concentration in old industrial areas was found to be 790 ppb, and the average concentration in new urban areas was just 66 ppb. These average landuse-specific PCBs and mercury concentrations are used in the loads reduction accounting for control measures where the amount of sediment removed can be determined such as in pump station cleanout, storm drain line cleanout, street flushing, and culvert/channel desilting. All of these load reduction accounting methods²⁸⁶ have been reviewed by Water Board staff and approved by the Executive Officer.

Provision C.12.d requires Permittees to ensure proper management of potential PCBs-containing material in bridge and overpass roadway expansion joints when these facilities are replaced or repaired. They will do so through implementation of a Caltrans specification (to be developed through proposed requirement in Caltrans stormwater permit, likely adopted by late 2022). The requirement for Caltrans to develop this

²⁹⁵ TSS Removal data for EBMUD and EBDA facilities from May 2016 through April 2021 (spreadsheet of data).

specification is included in the draft version of the statewide Caltrans permit currently under development. The standard operating procedure (SOP) for dealing with the material will likely be similar to that used for the 2018 demolition of the old eastern span of San Francisco Bay Bridge and will involve the removal and proper disposal of PCBs-containing caulk prior to the rehabilitation of existing roadways containing such material. The accountability metric is, therefore, demonstration by Permittees that the Caltrans SOP is applied to management of PCBs-containing material when bridge and overpass roadway surfaces are replaced or repaired.

In order to generate data to develop the load reduction estimate resulting from SOP implementation, the Bay Area Stormwater Management Agencies Association (BASMAA) evaluated PCBs in caulk and sealants in public roadways and storm drain infrastructure by sampling caulk and sealant materials from public roadway and storm drain infrastructure around the Bay Area.²⁸⁶ The sample locations were identified primarily based on the time period that the infrastructure was originally constructed and/or repaired, with a focus on the 1970s, the most recent time period PCBs were still in widespread use. This effort resulted in 54 caulk or sealant samples from public infrastructure in these locations. A total of 20 composite samples were then analyzed for PCBs concentrations. Ten of these composites were associated with concrete roadways, sidewalks, or bridges, and these ranged in concentration from non-detect to 5,000 mg PCB/kg. Through a maximum likelihood statistical approach applied to the data after estimating values for non-detects, a technically defensible value for the PCBs concentration was derived as 184 mg PCB/kg. The total amount of PCBs in roadway caulk or sealant was estimated using this concentration along with information about the dimensions of Bay Area bridges. The report estimates that the total amount of PCBs in the roadway caulk and longitudinal seal material on the 1,477 bridges in the MRP area is 39 kg.²⁸⁶

There are no available data in the literature for the rate at which PCBs leach from this caulk and sealing material, so the report authors evaluated a range of scenarios for the rate at which the PCBs in the material would leach from the joint and sealant material over time. The load reduction associated with this control measure occurs when this leaching process is interrupted through the removal of the material. A high (1% per year) and low (0.5 percent per year) leaching rate were evaluated.²⁸⁶ Based on the expected replacement rate of bridges, the expected load reduction ranged from 195 to 390 g PCBs/year, assuming that joints and longitudinal seal material would be removed. The estimated load reduction resulting from implementation of this provision element assumes an intermediate leaching rate (0.75 percent per year) and is thus 300 g PCBs/year.

The load reduction calculation method involves generating an estimate of the typical concentration of PCBs in roadway caulking and multiplying this by an estimate for the amount of material removed each year and an estimate for the PCBs leach rate is a sound and practical method for estimating the load reduction. As previously discussed,

attempts to use monitoring data or even modeling to estimate the load reduction resulting from removal of this PCBs-containing caulk would involve great expense and effort and would, despite these efforts, still yield a load reduction estimate with considerable uncertainty. The Water Board has reviewed the data collected, the statistical approach used to generate the typical PCBs concentration, as well as the analytical approach used to generate the load reduction estimate from the concentration data. These data are reliable and the statistical and calculation methodologies are logically consistent and technically sound.

Provision C.12.e requires Permittees to develop and implement a program to manage PCBs in oil-filled electrical equipment (OFEE) for municipally owned electrical utilities and collaborate with the Water Board to determine PCBs loadings in OFEE from non-municipally owned electrical utilities. The Water Board is committed to collaborating with Permittees to request and obtain the needed information from these non-municipally owned electrical utilities. The reporting requirements are contingent upon the Water Board formally transmitting the requested information from the non-municipally owned electrical utilities to the Permittees.

Due to past leaks or spills of PCBs oil from electrical equipment, properties owned and operated by electrical utilities may have elevated concentrations of PCBs in surface soils that can be released to the MS4. The cumulative releases of PCBs-laden soils from these properties was investigated by McKee et al. (2006²⁹⁶), and McKee estimated the net mass input of PCBs to MS4s in the Bay Area in 2005 was approximately 28 kg per year. Of this total, roughly 29 percent (8 kg/yr) was estimated to have originated from controlled closed systems (transformers and large capacitors). This estimate suggests that because of both current and past use, transformers and large capacitors, which are both electrical utility applications, may continue to contribute nearly one-third of the net PCBs mass to MS4s in the Bay Area. Therefore, this potential source warrants further investigation and control.

BASMAA²⁸⁶ estimates the annual load reductions from removing OFEE as the estimated annual load of PCBs that entered the MS4 from OFEE at the start of the PCBs TMDL (1.1 kg in 2005) multiplied by the estimated annual percentage of remaining OFEE equipment removed. In other words, all existing OFEE in 2005 were, combined, contributing 1.1 kg PCBs/yr loading to MS4s. Further, a permanent yearly load reduction is realized when a unit of OFEE is removed. The report provides a low, medium, and high estimate for the annual load reduction based on low, medium, and high estimates for the annual removal rate of OFEE (the percentage of remaining equipment removed each year since the start of the PCBs TMDL (in 2005)). Using the starting point of 1.1 kg PCBs per year from OFEE in 2005 along with the medium estimate (2.3 percent per year) for the equipment removal rate, there would be 758

²⁹⁶ McKee, L., Mangarella, P., Williamson, B., Hayworth, J., and Austin, L., 2006. *Review of methods used to reduce urban stormwater loads: Task 3.4. A Technical Report of the Regional Watershed Program: SFEI Contribution #429*. San Francisco Estuary Institute, Oakland, CA.

grams PCB/year mass loading from OFEE entering the MS4 at the start of MRP 3. Using this same 2.3 percent per year removal rate, the estimated cumulative load reduction by the end of MRP 3 is 90 g PCBs/year in consideration of the development of improved standard operating procedures to address spill response and reporting required by the Permit.

The load reduction calculation method for OFEE involves relying on a technically sound PCBs mass loading estimate from 2005 and applying reasonable factors for the removal rate of such equipment. As for other control measures, attempts to use monitoring data or even modeling to estimate the load reduction resulting from OFEE removal would involve great expense and effort and would, despite these efforts, still yield a load reduction estimate with considerable uncertainty. Water Board staff concurs with the calculation method used to generate the load reduction estimate and accept it as logically consistent and technically sound.

Provision C.12.f requires Permittees to implement green infrastructure projects during the term of the Permit at a level consistent with the requirements in Provision C.3.j. Provisions C.11.c and C.12.c of MRP 2 required Permittees “to develop RAAs to estimate the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040.” The analysis and resulting estimates for acres treated and PCBs load reductions are contained in the Annual Reports for the countywide programs submitted in Fall 2020.

The Permittees developed a variety of approaches (using models) to estimate the future PCBs and mercury load reductions resulting from future GSI implementation. The approaches were all consistent with guidance developed for the RAA modeling.²⁹⁷ In addition, all countywide programs’ modeling approaches were peer reviewed, and the peer review packages and final Reasonable Assurance Analysis modeling reports are contained in the FY 2019-2020 Annual Reports. There were some differences in the modeling approaches among the countywide programs, but the approach used by Alameda County and Contra Costa County illustrates the general concepts.

Baseline pollutant loading (prior to the application of land use changes or GSI implementation) was accomplished through a continuous simulation hydrology model combined with pollutant loading inputs to obtain the average annual loading of mercury and PCBs across a county during the TMDL baseline period (i.e., 2003 – 2005).²⁹⁷ The baseline model depends on a hydrology model component that produces average annual runoff across an area (e.g., Alameda County) for the period of record using a hydrologic response unit (HRU) approach. The HRU approach involves modeling various combinations of land surface features (e.g., imperviousness, underlying soil characteristics, slope) present within each county for a unit area drainage catchment. The hydrology output is combined with average annual concentrations estimated by the

²⁹⁷ Bay Area Stormwater Management Agencies Association (BASMAA, June 2017). *Bay Area Reasonable Assurance Analysis Guidance Document*. Prepared for BASMAA by Geosyntec Consultants.

Regional Monitoring Program's Regional Watershed Spreadsheet Model (RWSM²⁹²) developed by SFEI to produce average annual PCBs and mercury loading for the period of record. To obtain pollutant loading, average annual concentrations estimated by the RWSM, for each land use category (i.e., Old Industrial, Old Urban Commercial/Transportation, Old Urban Residential, New Urban, and Open Space) are multiplied by the calibrated average annual runoff volume estimated using the HRU approach. The average annual PCBs and mercury loading for the baseline period of record was validated using available in-stream concentration data, as described in Appendix E.

After baseline modeling, future load reduction modeling scenarios were developed to predict how future land use changes and control measure implementation would reduce pollutant loading. Future land use changes resulting from new development and redevelopment often reduce pollutant loading through use of newer building materials and improved runoff management practices. The POC load reductions through GSI implementation were developed through a combination of hydraulic modeling of GSI facilities combined with empirically derived effluent concentration estimates. Loads reduced from baseline are estimated based on projected land use changes and control measure implementation. To calculate pollutant load reductions associated with land use changes and GSI and source control implementation for future scenarios, the difference between the pollutant loading in the baseline scenario and the total pollutant loading associated with each future implementation scenario were calculated. Future scenarios included implementation in years 2030, 2040, and beyond 2040.

Interpolating between the 2020 and 2030 results presented in the RAA GSI modeling documentation for each countywide program (contained in RAA documentation in the FY 2019-20 Annual Reports) provides an estimate for the acreage and PCBs load reductions resulting from green infrastructure implementation by 2025:

• Alameda County:	1,230 acres	75 g/yr
• Contra Costa County:	950 acres	20 g/yr
• San Mateo County	314 acres	20 g/yr
• Santa Clara County	856 acres	13.5 g/yr
• Solano County Permittees	821 acres	76 g/yr

Summing these estimated load reductions across countywide programs results in a regionwide total estimated load reduction from green stormwater implementation of about 200 g/yr by the end of the permit term.

GSI are often watershed-based approaches that can be effective at reducing loads of PCBs and mercury. Because GSI uses a variety of physical removal mechanisms to filter water and remove particles, these control measures will also be effective at reducing loads of most other contaminants in urban stormwater. Thus, GSI implementation provides an effective multi-contaminant benefit in addition to the

benefits of reducing peak runoff and ameliorating the effects of hydromodification. The load reduction credit for GSI implementation will encourage watershed-based approaches, address multiple contaminants encourage the use of green infrastructure and the adoption of low impact development principles.

Some Bay Area drainages contain notably elevated PCBs concentrations in suspended or bedded sediment (e.g., > 500 ppb in bedded sediment). A recent analysis of soil PCBs and mercury data collected in the Bay Area identifies 15 sites where maximum concentrations exceed 3.8 mg/kg for PCBs and 1.6 mg/kg for total mercury. Areas with moderately high PCBs concentrations (e.g., 100-500 ppb) were found throughout areas where historical industrial activity involved use of PCBs (McKee and Yee 2015). Decisions guiding placement of green stormwater infrastructure depend on many factors involving opportunity and feasibility. Contaminant concentrations represent one factor among many and, thus, may not be the chief consideration in many circumstances. Nevertheless, placing green infrastructure in highly- and moderately contaminated areas may form an important element in achieving the PCBs TMDL-required load reductions. However, green infrastructure implementation is a long-term proposition and there is also value in placing green infrastructure across the broader landscape to intercept PCBs before they are discharged to receiving water.

Provision C.12.g requires Permittees to require applicable structures to sample for PCBs prior to receiving a demolition permit, inspect demolition projects during demolition activities, enhance their construction site controls for demolition projects, and for those cases where notification and advance approval from the U.S. EPA is not required, submit a copy of the hazardous waste manifest prepared for transportation of the material to a disposal facility.

After a year of requiring applicable structures to sample for PCBs in five priority building materials (caulk, fiberglass insulation, thermal insulation, adhesive mastic, and rubber window gasket or bulk product waste) prior to issuing a demolition permit, the Permittees' 2019-2020 Annual Reports show that 18 applicable structures had bulk product waste with PCBs concentrations of 50 ppm or greater. As of January 2022, U.S. EPA's database indicated that eight of those applicable structures have submitted hazardous wastes manifest to U.S. EPA, thus demonstrating that the bulk wastes with PCBs concentrations of 50 ppm or greater were disposed appropriately. U.S. EPA was overseeing the demolition and site remediation for all eight structures. For the remaining 10 sites that are undergoing demolition without U.S. EPA oversight, we have no information on whether bulk product wastes with PCBs concentrations of 50 ppm or greater were handled and disposed appropriately. This Provision requires the Permittees to submit a copy of the hazardous waste manifest to document that the PCBs-containing materials were disposed consistent with federal and state regulations, thus ensuring the PCBs in the bulk product waste will not be available to be discharged into the MS4. The hazardous waste manifests can be used as supporting data for the effectiveness of the protocol for controlling PCBs during building demolition.

PCBs can readily migrate to storm drains through vehicle track out of contaminated soils, airborne releases, soil erosion or stormwater runoff during or after demolition. Provision C.6 requires monthly inspections of construction sites, through all phases of construction, during the rainy season to determine the effectiveness of BMPs in preventing the discharge of pollutants into the MS4. Demolition is a phase of construction. This Provision requires the Permittees to enhance their construction site control programs to minimize the migration of PCBs from demolition sites into the MS4. Enhancement of construction site control programs could include dry season monthly inspections, street sweeping during active work hours at demolition sites, post-demolition of surrounding streets after any airborne releases are likely to have settled, and use of street sweepers that are designed to effectively remove sediment and dust from paved surfaces.

Soil and sediment characterizations at demolition sites with bulk product waste, including the Kaiser Permanente Medical Center Oakland Legacy Tower Demolition Project in Oakland, show that soils up to 10 feet from the building and up to 4 feet deep, and sediment in storm drains can have PCBs concentrations between 0.24 ppm and 50 ppm. If an applicable structure does not require notification and advance approval from U.S. EPA for disposal, soil and storm drain sediments may not be tested for PCBs. Contaminated soils and sediment in the storm drains may not be removed and properly disposed during the demolition of the applicable structure. As such, they will continue to be sources of PCBs to the MS4. For this Permit term, the requirement to demonstrate proper disposal of PCB-containing wastes is a proxy to demonstrate that the entire demolition project, including surrounding soils, is managed properly. However, the Permittees are encouraged to take additional steps as needed to prevent PCBs-containing soils from demolition sites from entering the MS4. may want to consider a special project designed to characterize, at demolition projects, the concentration of PCBs in soils near the applicable structures and in the sediment in the storm drains.

Klosterhaus et al. (2014)²⁹⁰ estimated that 10,500 kg of PCBs remain in interior and exterior caulk in buildings located in the permit area, which equates to an average of 4.7 kg PCBs per building with PCBs. The 2013 Integrated Monitoring Report (IMR)²⁹⁸ presents estimates of the mass of PCBs per building (constructed or renovated prior to 1979) ranging from 0.6-16 kg and contribution to stormwater ranging from 0.8 to 4000 grams/year. PCBs from building materials is one of the largest known sources of PCBs and it is distributed throughout the region. For a building containing the average amount of 4.7 kg of PCBs and control measures of medium effectiveness, there may be 280 grams of PCBs released to stormwater during demolition, assuming control measures are only moderately effective. If only control measures of low effectiveness were in place, such a building would release 560 grams PCBs during demolition.²⁹⁸

²⁹⁸ Integrated Monitoring Report Part B: PCB and Mercury Loads Avoided and Reduced via Stormwater (IMR). Prepared by Geosyntec Consultants for the Bay Area Stormwater Management Agencies Association. 2013.

The PCBs load reductions expected through this control measure will be the same as those estimated for MRP2 because the same control measures are in place, and the method for calculating the load reductions remains the same. In other words, no additional load reductions are expected. The PCBs load reductions resulting from implementing control measures to prevent discharge to storm drains of PCBs in building materials during demolition can be computed as: the mass of PCBs contained in applicable buildings multiplied by the fraction of PCBs entering stormwater conveyances in the absence of controls multiplied by the effectiveness of controls preventing PCBs from entering stormwater conveyances. Each term in this calculation can be represented by a range of values, and information is limited on some of these terms (particularly the fraction of PCBs entering storm drains). However, reasonable values, derived from information available from Klosterhaus,²⁹⁰ are:

- Mass of PCBs per building = 5 kg
- Number of regulated buildings demolished/year = 50
- Average fraction of PCBs in building material that enters MS4s during demolition without controls = 1 percent
- Average effectiveness of controls at preventing PCBs from entering storm drains = 80 percent

Multiplying these parameters suggests that about 2 kg/yr of PCBs loads can be reduced by effectively controlling PCBs-containing material during demolition. The actual number of demolitions will vary, but 2 kg represents a reasonable estimate for the load reduction in the Bay Area during a typical year and is the basis for establishing the yearly estimated load reduction for controlling the release of PCBs to storm drains from such demolitions.

As previously discussed, using monitoring data or even modeling to estimate the load reduction resulting from controlling the PCBs-containing demolition debris would be a complex and expensive undertaking. Despite these efforts, the monitoring data would still yield a load reduction estimate with considerable uncertainty. The Water Board has reviewed and approved the method to estimate the PCBs load reduction using information from the Klosterhaus technical paper. The calculation methodology is logically consistent and technically sound.

The Previous Permit allowed Permittees to seek exemption from implementing Provision C.12.f – Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains (Provision C.12.f). For this exemption, Permittees were required to provide documentation acceptable to the Executive Officer in their 2017 Annual Reports that the only structures that existed pre-1980 within their jurisdiction are single-family residential and/or wood-frame structures. Only the Town of Clayton requested and received exemption from Provision C.12.f. This Permit extends the deadline for requesting and receiving this

exemption to the 2023 Annual Report, because there are a few Permittees who were unable to gather the needed documentation by the exemption deadline. The Water Board does not anticipate another extension of this exemption deadline.

Provision C.12.h requires Permittees to update (as needed) the plans and schedules prepared during MRP2 for PCBs control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations. The updates should focus on those control measures for which new information is available and for control measures not evaluated in previous efforts. The Permit requires that these plans must: identify all technically and economically feasible PCBs control measures (including green infrastructure projects) to be implemented; include a schedule according to which these technically and economically feasible control measures will be fully implemented; and provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.

Provision C.12.h also requires Permittees to submit information to inform PCBs-related requirements in the subsequent permit term. Namely, Permittees must identify all specific control measures to be implemented along with the expected intensity (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied, etc.) of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term.

The PCBs TMDL anticipated the challenge of achieving the urban runoff load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that

4. *“... achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and accomplished all of the following:*
 - *A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;*
 - *Documentation has been prepared that demonstrates that all technically and economically feasible and cost-effective control measures recognized by the Water Board have been fully implemented, and evaluates and quantifies the PCBs load reduction of such measures;*

- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.”*

Provision C.12.h provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. The load reductions for PCBs are difficult and time-consuming to achieve because of the distribution of sources in the landscape; challenges associated with finding and reducing these existing sources; and unpredictability related to demolition of PCBs containing structures. The RAAs submitted during MRP 2 emphasize that expected PCB load reductions will come from long-term implementation of control strategies (like source control, cleanup of contaminated sites, green infrastructure, and others) that extend beyond the current implementation timeframe of the TMDL. The updates to the long-term plans and schedules required by this provision could potentially support an amendment to the TMDL implementation timeframe.

Provision C.12.i. There are still uncertainties surrounding the magnitude and nature of PCBs reaching the Bay in urban runoff and the ultimate fate of such PCBs, including biological uptake. Provision C.12.g requires that Permittees ensure that fate and transport studies of PCBs in urban runoff are completed. The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

Provision C.12.j requires actions to mitigate human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish to be aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in a previous permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.13. Copper Controls

Chronic and acute site-specific objectives (SSOs) for dissolved copper have been established in all segments of San Francisco Bay. The plan to implement the SSOs and ensure the achievement and ongoing maintenance of the SSOs in the entire Bay includes three types of actions for urban runoff management agencies. These actions are implemented through this Permit as provisions to control urban runoff sources of copper.

The control measures for urban runoff target significant sources of copper identified in a report produced in 2004 for the Clean Estuary Partnership.²⁹⁹ This report updated information on sources of copper in urban runoff, loading estimates and associated level of uncertainty, and summarized feasible control measures and priorities for further investigation. Accordingly, the Permit provisions target major sources of copper including architectural copper, copper pesticides, and industrial copper use.

Fact Sheet Findings in Support of Provision C.13.

- C.13-1** Urban runoff is a conveyance mechanism by which copper reaches San Francisco Bay.
- C.13-2** Copper has the reasonable potential to cause or contribute to exceedances of copper water quality standards in San Francisco Bay.
- C.13-3** SSOs for dissolved copper have been adopted for all segments of San Francisco Bay.
- C.13-4** The Permit requirements to control copper to the MEP are necessary to implement and support ongoing achievement of the SSOs.
- C.13-5** One of the major sources of copper to urban runoff has been addressed through passage of Senate Bill 346 in 2010, which requires brake pad manufacturers to reduce the use of copper in brake pads sold in California to no more than 5 percent by weight by 2021, and no more than 0.5 percent by 2025. The law also provides an objective process to ensure that any new brake materials meet all applicable safety and performance standards. To make sure that new materials will not cause future environmental problems, the law requires brake manufacturers to screen potential alternatives for their impacts on human health and the environment using the Toxic Information Clearinghouse, and to select less hazardous options.
- C.13-6** A scientific uncertainty regarding sediment toxicity was identified during the development of SSOs for copper. Bay sediment copper concentrations are somewhat elevated above the natural background (from native soils). Local

²⁹⁹ TDC (TDC Environmental), 2004. *Copper Sources in Urban Runoff and Shoreline Activities*. Prepared for the Clean Estuary Partnership.

soils contain 30- 35 ppm (DW, dry weight) based on deep (> 2 meter) sediment core results for SF Bay. The copper ERL (effects range low) is 34 ppm (DW) and the ERM (effect range median) is 240 ppm (DW). Thus, the natural concentration of local soils is very close to the ERL. There has never been an exceedance of the ERM in the 975 samples collected and analyzed through RMP data. The maximum copper sediment concentration ever recorded in RMP samples (94 ppm DW) is well below the LC50 (concentration that kills 50 percent of test organisms) of the amphipod *Eohaustorius estaurius* (534 ppm) or the amphipod crustacean *Hyalella azteca* (260 ppm). Surface sediment copper concentrations have trended lower over the last 25 years according to monitoring in the Bay. The median surface concentration of copper was 40 ppm (DW) during the period 1993-2004 and dropped to 36 ppm in 2009-2018 (data from SFEI's Contaminant Data Download and Display system, <https://cd3.sfei.org/>). This reduced concentration occurred despite significant population increases in the Bay Area and increased sampling in the shallower parts of the Bay (where copper concentrations would be expected to be higher due to human activities and urban sources) during the latter period because of a re-design of RMP sampling strategies. There was some evidence of possible copper-related toxicity in the late 1990s, but there has not been additional evidence of this phenomenon. Possible sediment toxicity occurred in the northern portions of San Francisco Bay (Suisun Bay and San Pablo Bay) where sediment copper concentrations are higher. However, the decrease in median sediment copper concentrations in the northern estuary from the time period 1993-2004 (52 ppm DW) to 2009-2018 (43 ppm DW) has been even more pronounced than the reduction for the Bay as a whole. Because there has not been additional evidence of copper sediment toxicity and copper concentrations in surface sediments appear to be decreasing over time, Permit requirements to further investigate copper sediment toxicity in San Francisco Bay were satisfied by information collected under MRP 1.0 and are no longer needed. If more evidence of such toxicity does appear, this requirement may be reinstated.

- C.13-7** Scientific uncertainty regarding the olfactory impairment of salmonids was identified during development of SSOs for copper. Exposure to dissolved copper has been shown to cause olfactory impairment at relatively low concentrations in freshwater fish, resulting in an impaired avoidance response to predators. When the SSOs were established, studies were planned to address whether or not this phenomenon occurred in estuarine water. The studies³⁰⁰ were supported in part through requirements under MRP 1 and were conducted by David Baldwin of NOAA's Northwest Fisheries Science Center.

³⁰⁰ David Baldwin, NOAA Fisheries, Northwest Fisheries Science Center, 2015. *Impact of dissolved copper on the olfactory system of juvenile salmon, Phase II: Effect of estuarine salinity on olfactory toxicity.*

Dr. Baldwin measured the firing of neurons in response to exposure to odorant chemicals. The studies indicate that salmon in saline or moderately saline water are much less sensitive than salmon in freshwater, and that the potential effect of copper on salmon olfaction is not a concern in the Bay.

Specific Provision C.13. Requirements

Provision C.13.a. Copper is used as an architectural feature in roofs, gutters and downspouts. When these roofs are cleaned with aggressive cleaning solutions, substantial amounts of copper can be liberated. Provision C.13.a for architectural copper involves a variety of strategies ranging from BMPs to prohibition against discharge of these cleaning wastes to the storm drain.

Provision C.13.b. Copper is commonly used as an algaecide in pools, spas, and fountains. Provision C.13.b prohibits discharge to the storm drain of copper-containing wastewater from such amenities.

Provision C.13.c. Some industrial facilities likely use copper or have sources of copper (e.g., plating facilities, metal finishers, and auto dismantlers). This control measure requires municipalities to include these facilities in their inspection program plans.

C.14. Bacteria Controls

Fact Sheet Findings in Support of Provision C.14

C.14-1 This Permit Provision implements the urban runoff requirements of TMDLs that contain wasteload allocations for MS4 discharges of bacteria. Each subprovision references applicable TMDL approval and effective dates. A separate subprovision (C.14.a) requires actions Permittees must take when MS4 discharges may be causing or contributing to exceedances of applicable bacteria water quality objectives in a receiving water for which a TMDL has not been established.

Specific Provision C.14 Requirements

C.14.a. Enhanced Bacteria Control

The provision applies to the cities of Sunnyvale and Mountain View (referred to as the Cities in C.14.a), which may be causing or contributing to exceedances of applicable bacteria water quality objectives in a receiving water (hereafter referred to as waters with elevated bacteria densities). The provision calls for strategic and enhanced implementation of BMPs that are required in other provisions of this Permit; thus, the authorities for Provision C.14.a. are stated in the fact sheet for Provisions C.2, C.4, C.7, C.10, and C.15. This Provision also requires the Cities to conduct additional water quality monitoring to identify sources of bacteria to the receiving water and to determine whether the applicable bacteria objectives have been achieved after implementation of BMPs. The monitoring and reporting requirements of Provision C.14.a. are authorized under Clean Water Act § 308, 40 C.F.R. §§ 122.26(d)(2), 122.41(h), (j) and (l), 122.42(c), 122.44(i) and 122.48, and Water Code § 13383.

The pollution control and reporting requirements of this provision are consistent with the phased implementation strategies of the bacteria TMDLs adopted in the San Francisco Bay Region. This Provision requires implementation of the source control actions required in phase one of adopted TMDLs. The Cities are expected to meet Receiving Water Limitations B.2 for applicable bacteria water quality objectives by the June 30, 2027. If receiving water limitations are not met, despite a diligent effort to quantify levels and the sources of bacteria in MS4 discharges and documentation of completion of controls required by C.14.a.i-vii, then the Cities must submit a plan for additional actions to attain the receiving water limitations as soon as possible.

This Provision applies to the City of Mountain View for discharges to Stevens Creek and the City of Sunnyvale for discharges to Stevens Creek, Calabazas Creek, and Sunnyvale East Channel/Guadalupe Slough. Data collected by San Francisco Baykeeper indicated that discharges from these cities' MS4s may have caused or contributed to exceedances of the bacteria water quality objectives, and both Mountain View and Sunnyvale have submitted to the Water Board notification and a report of proposed actions as set forth in Provision C.1. The enhanced bacteria controls required

by this Provision are based on controls proposed by the Cities and phase one bacteria controls required of municipalities with bacteria wasteload allocations in adopted TMDLs. They are also consistent with management strategies for bacteria in stormwater described in the Minnesota Stormwater Manual.

Other Permittees that find their MS4 discharges may be causing or contributing to exceedances of applicable bacteria water quality objectives in a receiving water, in accordance with Provision C.1.a. of this Permit, must notify the Water Board and submit a report that describes controls or BMPs currently being implemented and the current level of implementation, and proposes additional controls or BMPs and/or an increased level of implementation, to prevent or reduce exceedances of bacteria water quality objectives. If such controls and BMPs are consistent with Provision C.1.a requirements, the Water Board will consider amending this Permit to require implementation of the controls and BMPs.

Path to Compliance with Bacteria Receiving Water Limitations

Provision C.14.a provides a directed path, with enforceable requirements, that allow the Cities appropriate time to come into compliance with receiving water limitations without being in violation of bacteria receiving water limitations during full implementation of the directed path to compliance. This directed path to compliance is consistent and conforms with State Board Orders WQ 2015-0075, as amended by Order WQ 2021-0052-EXEC, and WQ 2020-0038.

WQ 2015-0075, as amended, directs regional water boards to consider and allow a path to compliance with receiving water limitations guided by a set of principles unless a regional water board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons. The path to compliance directed by Provision C.14.a meets each of the applicable principles (see further detail below).

In WQ 2020-0038, the State Water reiterated WQ 2015-0075's standards for rigor, transparency, and accountability for alternate compliance, and further emphasized that regional water boards must ensure any approved alternative compliance plans regional water boards using alternative compliance approaches to ensure plans approved clearly explain their development process and identify enforceable milestones. However, the State Water Board recognized WQ 2020-0038 is not intended to curtail the flexibility of the regional water boards to adopt alternative compliance approaches that best fit their particular regions or to restrain the evolution of the regional water boards' approaches to alternative compliance. The path to compliance directed by Provision C.14.a is based on rigorous and transparent consideration of the state of science and understanding of sources of fecal indicator bacteria and options to control them and includes enforceable requirements. However, rather than approval of compliance plans submitted by the Cities, Provision C.14.a directly specifies actions that must be implemented by the Cities that are consistent with bacteria TMDLs requirements in the region and informed

by the Water Board's knowledge and expertise regulating bacteria and the plans submitted by the Cities. These required actions are clear, transparent, and directly enforceable rather than reliance on a plan.

The path to compliance directed by Provision C.14.a is based on the following points that describe state of science and understanding of sources of fecal indicator bacteria and options to control them.

- Fecal indicator bacteria, *E. coli* and enterococci, are bacteria that are normally prevalent in the intestines and feces of warm-blooded animals.
- Levels of bacteria are measured as number of colony forming units (cfu) of bacteria in a 100 mL of sample. Maximum level (statistical threshold value) water quality objectives are 320 cfu/mL for *E. coli* and 100 cfu/100 mL for enterococci. Levels in the parts of the Cities' receiving waters have periodically been as high as about 4,000 cfu/mL during dry weather and 17,000 cfu/100mL, but they are substantially lower—about a billion times less—than levels of these bacteria in raw sewage (trillions of cfu/100mL). Accordingly, the levels in receiving waters are likely not associated with discrete ongoing discharges of untreated raw sewage.
- Bacteria sources and discharges in municipal stormwater runoff and dry weather discharges are episodic, not constant, except where there is an illicit connection from a sanitary sewer or other ongoing discharge of sewage.
- It is not possible to model sources and loading of bacteria in MS4s using watershed pollutant loading models due to the episodic and variable nature of bacteria sources. Some quantitative analysis of loading may be possible through monitoring; however, since bacteria discharge volumes are highly variable both spatially and temporally and difficult to measure, the analysis would inevitably involve a great deal of uncertainty and be unreliable for purposes of quantifying loads from drainage areas. However, mapping of potential sources areas and targeting of control efforts can be tracked and analyzed using geographic information systems.
- Controllable sources to the Cities' MS4s or surface waters located within the Cities' boundaries include the following:
 - Direct sources of human fecal matter (e.g., homeless encampments, recreational vehicle discharges, illegal dumping of human waste/diapers);
 - Sanitary sewer sources of human fecal matter (e.g., sanitary sewer overflows, exfiltration, illicit connections);
 - Pet waste (e.g., dogs, domestic and feral cats, backyard chickens, livestock);
 - Trash receptacle leachate. Trash bins may also contain discarded pet waste or diapers; and

- o Wildlife waste (e.g., birds, rodents, deer, raccoons, coyotes) if associated with human activities, such as littering and exposed trash receptacles, which can attract wildlife by creating scavenging areas. Some wildlife waste may be moderately controllable; however, most is uncontrollable.
- Uncontrollable sources to the Cities' MS4s or surface waters located within the Cities' boundaries include:
 - o Wildlife waste (e.g., birds, rodents, deer, raccoons, squirrels, rabbits, skunks, opossums, coyotes, wild turkey, bobcats, mountain lions) from wildlife in open space, creek corridors, and in creeks and stormwater conveyance systems. Given these are predominantly natural corridors, elimination of natural wildlife from creeks would not be desirable; and
 - o Bacteria naturally present in the environment, such as biofilms, organic matter, soils, and sediments in the watershed, and creeks.
- Effective control of bacteria sources and discharges requires a comprehensive surveillance and source identification and control program in drainages to creeks experiencing elevated bacteria.
- Existing efforts may or may not be sufficient. After initial source identification and control of the most likely or possible sources that contribute to segments of creeks experiencing elevated bacteria, there must be ongoing surveillance and discharge response and control actions, including outreach and enforcement, to maintain existing controls, and if necessary to identify additional sources and enhanced or additional controls.
- Treatment of runoff to reduce fecal indicator bacteria levels below water quality objectives is not feasible. While some treatment systems that provide biofiltration and bioretention and/or capture runoff will reduce levels of bacteria in runoff discharges, reduction to levels below water quality objectives requires disinfection, as in municipal wastewater treatment systems. Disinfection of stormwater runoff is not feasible with episodic and variable runoff discharges, and if chlorine were to be used for disinfection, due to its high toxicity, a system would also have to include dichlorination, which is also not feasible for episodic and variable runoff discharges. Strategic routing of contaminated runoff to the sanitary system may have some viability.
- Basin Plan Section 4-8 - Stormwater Discharges provides a phased approach towards attainment of water quality objectives in MS4 receiving waters, wherein if a first phase of actions does not result in attainment of water quality objectives, the Water Board will consider subsequent permit conditions that require implementation of additional control measures. In such circumstances, the Water Board may consider dischargers' proposed schedules for identification and implementation of additional control measures designed to attain water quality objectives. Such

schedules shall be as short as practicable and will only be considered for inclusion in permits when a discharger has demonstrated the following:

- (a) A diligent effort to quantify pollutant levels and the sources of the pollutant in stormwater discharges; and
 - (b) Documentation of completion of implementation of all technically and economically reasonable control measures.
- The Water Board has adopted numerous TMDLs for bacteria and pathogens for select impaired waters. The TMDLs and wasteload allocations are based on rigorous analyses of the problems associated with these pollutants and the solutions to address them. Their implementation plans to achieve the MS4 wasteload allocations rely on source identification and control for MS4 discharges and a phased approach toward achieving water quality objectives, namely implementing source-specific controls and monitoring to find sources and determine effectiveness of controls. Where wasteload allocations are not met after the first phase of actions, additional and enhanced actions and monitoring are required.

Based on these points, the Order provides time for the Cities to comprehensively evaluate their existing bacteria control actions, systematically conduct surveillance and monitoring to identify sources, implement existing or appropriate new or enhanced controls where necessary, and monitor effectiveness of those controls to comply with bacteria receiving water limitations by the end of the permit term. The source identification and source control requirements are practical and robust and represent a logical first phase that could or should result in elimination of bacteria sources that result in MS4 discharges that cause or may cause or contribute to exceedances of bacteria water quality objectives in receiving waters. Given the completeness and thoroughness of what is required to find and control bacteria sources, the Water Board expects compliance with bacteria receiving water limitations by the end of the Permit term. However, due to impossibilities or limitations of modeling or conducting quantitative analysis for bacteria MS4 discharges and known and unknown uncertainties associated with identifying and controlling possible sources, it is impossible to assert with certainty at the onset of the Permit term that source identification and control actions will result in compliance by the end of the Permit term. For this reason, the expectation to comply with receiving water limitations by June 30, 2027, is not expressed in the Permit as an enforceable final deadline.

Given the challenges and uncertainties with bacteria source identification and control actions, there is the possibility that phase one actions will not result in compliance by the end of the permit term. As such, the Order calls for a mid-term report to document progress and communicate adaptation of efforts based on initial successes and challenges, and an end of Permit term report to either document compliance with bacteria receiving water limitations or if necessary, a plan and schedule of new or enhanced controls to attain compliance as soon as possible in the next permit term.

Phase two actions, if necessary, will depend on the actions taken during the permit term (phase one), and, therefore, cannot yet be specified. This adaptive phased implementation approach is consistent with bacteria TMDL wasteload allocation implementation requirements for municipal stormwater dischargers adopted by the Regional Water Board and approved by the State Water Board and is the most effective way to achieve compliance with bacteria receiving water limitations in a timely manner.

The path to compliance directed by Provision C.14.a meets each of the applicable principles in State Water Board WQ Order 2015-0075, as amended by Order 2021-0052-EXEC.

- In accordance with principle 1, this Order continues to use the receiving water limitations provisions as directed by State Water Board Order WQ 99-05 and does not deem good faith engagement in the iterative process to constitute compliance with receiving water limitations. Rather, it includes prescriptive requirements (Provision C.14.a) with deliverables and deadlines for the Cities to implement actions and controls to comply with receiving water limitations for bacteria, which are based on best available science and knowledge of bacteria sources and controls.
- Principle 2, that permits should include a provision stating that, for water body-pollutant combinations with a TMDL, full compliance with the requirements of the TMDL constitutes compliance with the receiving water limitations for that water body-pollutant combination, is not applicable. There is not a bacteria TMDL for any of the Cities' receiving waters; however, the requirements in Provision C.14.a are based on the requirements of adopted and approved bacteria TMDLs for other waterbodies. The requirements reflect the Water Board's determination in these TMDLs of the most effective way to resolve bacteria impairments in the region.
- In accordance with principle 3, this Order incorporates an ambitious, rigorous, and transparent alternative compliance path that allows the Cities appropriate time to come into compliance with receiving water limitations without being in violation of the receiving water limitations during full implementation of the compliance alternative. It includes requirements to implement a comprehensive monitoring and surveillance program and source control actions to identify all controllable sources of bacteria and to control them in a timely manner. The requirements necessarily involve planning and studying because it is unknown where the bacteria sources are.³⁰¹ As discussed previously, due to impossibilities or limitations of modeling or conducting quantitative analysis for bacteria MS4 discharges, at the onset of the Permit term, it

³⁰¹ The State Water Board has held that the "safe harbor" in the planning phase is appropriate if it is clearly constrained in a manner that sustains incentives to move on from planning to approval of plans in the case of the Los Angeles Regional Water Board's MS4 permit and is structured with clear, enforceable provisions. (WQ Order 2021-0052-EXEC, p. 62.) The evaluations that must be done here are clear and have enforceable deadlines. (See, e.g., Provision C.14.a.viii(2).) In addition, the requirements have built-in source control actions informed by the evaluations, such that progress can be made and compliance achieved.

is impossible to assert with certainty that specific water quality improvement milestones can be achieved during the Permit term. Furthermore, given the challenges and uncertainties with bacteria source identification and control actions, there is the possibility that phase one actions will not result in compliance by the end of the Permit term. The Order calls for a mid-Permit term report to adapt efforts based on initial successes and challenges, and an end of Permit report to either document compliance with bacteria receiving water limitations or if necessary, a plan and schedule of new or enhanced controls to attain compliance as soon as possible in the next permit term. The State Water Board supports this kind of adaptive management where compliance is not achieved. (WQ Order 2021-0052-EXEC, p. 65-66.)

- In accordance with principle 4, this Order calls for a watershed-based approach to identify and control likely or potential sources of bacteria in storm drain drainage areas that discharge to receiving waters. This Order partly conforms to the part of principle 4 to address multiple contaminants to the extent that source controls for other contaminants or pollutants, such as trash, may also control bacteria. The Provision C.14.a compliance path does not incorporate TMDL requirements as called for in principle 4, because there is not a bacteria TMDL for the affected receiving waters. However, the requirements are consistent with implementation requirements for other bacteria TMDLs.
- Partially in accordance with principle 5 and principal 6, this Order calls for use of green infrastructure and the adoption of low impact development principles and encourage multi-benefit regional projects that capture, infiltrate, and reuse stormwater and support a local sustainable water supply. The Provision C.3 New and Redevelopment requirements call for use of green infrastructure and low impact development principles, including multi-benefit regional projects that capture, infiltrate, and reuse stormwater, on projects and plans for implementing green infrastructure over time with a mandatory minimum during the permit term. These actions will result in some bacteria reduction. However, there are no current available and viable treatment controls, including green infrastructure, that can reduce concentrations of fecal bacteria to low levels consistent with applicable water quality objectives.
- Consistent with principle 7, the Provision C.14.a compliance path has rigor and accountability. The compliance path provided by this provision is based on the rigorous analyses done for other bacteria TMDLs and thus reflect the most effective way to address bacteria in MS4 discharges. The requirements also reflect rigor, accountability, and transparency in that the Cities are required to conduct a comprehensive monitoring and surveillance program based on watershed and drainage area characteristics to systematically identify bacteria sources and implement and assess control actions in a timely manner, and subsequently conduct further monitoring to evaluate the effectiveness of controls. This includes geographic

information analysis of potential sources and existing bacteria control action locations to optimize additional controls, which analysis is a form of quantitative analysis for bacteria (modeling and quantitative analyses of bacteria loading is infeasible or unreliable, as explained above). The Order calls for annual reporting on completed and planned actions and monitoring results, a mid-Permit term report to adapt efforts based on initial successes and challenges, and an end of Permit term report to either document compliance with bacteria receiving water limitations or if necessary, a plan and schedule of new or enhanced controls to attain compliance as soon as possible in the next permit term. Again, as discussed previously, due to impossibilities or limitations of modeling or conducting quantitative analysis for bacteria MS4 discharges, at the onset of the Permit term, it is impossible to assert with certainty that specific water quality improvement milestones can be achieved during the Permit term. **Provision C.14.a.i.** requires the Cities to evaluate the potential for municipal operations to generate bacteria that can be discharged in runoff and, where needed, to enhance existing BMPs to minimize the transport of bacteria. In this subprovision, “municipal operations” refers to street, sidewalk, and plaza cleaning; maintenance of parks and open spaces; and cleaning of catch basins, pump stations, and other storm sewer system components. Examples of enhanced maintenance activities that help to reduce bacteria loading include (Geosyntec Consultants 2012):

- **Street Cleaning.** Street Cleaning Measurements of fecal coliform bacteria on sediment collected during street cleaning have ranged up to 108 colonies per pound of sediment (Bannerman 1993, Snyder 2012). Street and parking lot cleaning reduces sediment, trash, and other pollutant loading to urban storm drains. High efficiency street sweepers, such as regenerative air sweepers and vacuum assisted sweepers, remove more sediment from roadways, and capture the fine particles with which bacteria are typically associated (UWRRC 2014).
- **Storm Sewer Cleaning:** Cleaning by jet spraying and vacuuming of wash water removes accumulated trash, sediment, organic matter and animal waste, thereby reducing both fecal indicator bacteria and other pollutants. Features and locations to be cleaned can be prioritized based on proximity to receiving waters, magnitude of threat, and similar considerations.
- **Catch Basin Cleaning:** The dark, humid environment and presence of wildlife (e.g., raccoons and rats in storm drain catch basins) provide conditions favorable to the persistence of bacteria in storm drain systems. A San Diego study found that commercial catch basins had significantly higher bacteria than residential catch basins (Weston Solutions 2010b); thus, prioritizing catch basin cleaning in commercial areas is expected to yield more significant bacteria reductions.

Provision C.14.a.ii. requires the Cities to enhance industrial and commercial site stormwater inspections such that illicit discharges and other bacteria sources are identified and controlled. Bacteria sources at these sites may include connection of

sanitary sewer lines to the stormwater system (indicated by evidence of dry weather flows); leaking or poorly maintained porta-potties; outdoor washing of floor mats; and overflowing garbage and recycle bins.

Provision C.14.a.iii. requires the Cities to evaluate the potential for bacteria transport to surface waters from areas inhabited by unsheltered homeless persons, and to implement BMPs to minimize such transport. This Provision is intended to require Permittees to implement or enhance BMPs described in the Fact Sheet and Permit for Provision C.17 in areas with unsheltered homeless populations that discharge to water bodies with elevated bacteria densities.

Provision C.14.a.iv. requires the Cities to evaluate the potential for bacteria transport from areas where domestic animals are present to surface waters with elevated bacteria densities. The waste from dogs, cats, horses, and other domestic animals can contain bacteria and parasites like *E. coli*, *Salmonella*, *Giardia*, and tape worms, which can infect and cause illness in humans, as well as wildlife and domestic animals. Pet waste left on the ground either passes through storm sewers untreated or washes directly into water bodies. Appropriate BMPs include inspections of pet and horse boarding facilities and installation and maintenance of pet waste stations.

Provision C.14.a.v. requires the Cities to enhance public outreach where it is likely to improve human behavior regarding bacteria pollution prevention practices. Such practices include cleaning up pet waste and litter, eliminating outdoor restaurant floor mat washdown, using proper BMPs for sidewalk cleaning, covering trash areas, and maintaining porta-potties properly.

Pet waste is a significant contributor to bacteria in runoff; in a study of the Patapsco River in Maryland, for instance, pet waste was estimated to contribute approximately 26% of bacteria pollution.³⁰² The degree of behavior change resulting from pet waste outreach campaigns has been measured in association with bacteria TMDLs in southern California and other places. A report on the Dog Waste Management Plan for Dog Beach and Ocean Beach found that public compliance with the “scoop the poop” policy was highly dependent on awareness of the policy and availability of waste disposal bags and trash cans (Weston 2004). In Bellingham, Washington, public outreach over two years increased respondents’ awareness of bacteria impacts from dog waste and was correlated with a 6% increase in the number of respondents who cleaned up their dogs’ waste at home.³⁰³ Scoop the poop pledges can be successful; for instance, in Kirkland, Washington, a follow up survey of several hundred people who signed a pledge to scoop their pet waste indicated that 94% of them scooped their pets’

³⁰² Maryland Dept. of the Environment, Total Maximum Daily Loads of Fecal Bacteria for the Patapsco River Lower North Branch Basin in Anne Arundel, Baltimore, Carroll, and Howard Counties, and Baltimore City, Maryland (Aug. 2009) Fig. C-2, p. C14.

³⁰³ Squalicum Residential Dog Waste Post-Program Survey Findings (2015)

poop all the time.³⁰⁴ The City of Austin, Texas, conducted public surveys and found their educational campaign resulted in a 9% improvement in the number of pet owners who claim to regularly pick up waste (UWRRC 2014), and its twenty-year-old program of deploying poop bag dispensers and trash cans throughout the city has reduced bacteria levels in receiving waters. (*Austin Statesman* 2019³⁰⁵). Studies in San Diego have shown that installation of pet waste stations with trash cans and disposal bags has resulted in a 37% reduction in the total amount of pet waste in city parks (UWRRC 2014).

Where controllable wildfowl may be contributing to elevated bacteria densities in water bodies, control strategies have been developed by the University of Nebraska at Lincoln (Cleary 1994, Internet Center for Wildlife Damage Management 2015) and the U.S. Department of Agriculture APHIS (Preusser 2008), and some of these strategies are appropriate for waterfowl in general. In Alaska, a lake was delisted for bacteria after the state implemented goose management practices, including egg harvesting, habitat alteration, and hunting, and a pet waste campaign that included outreach and installation of pet waste stations.³⁰⁶

Provision C.14.a.vi. requires the Cities to collaborate with entities responsible for maintenance and repair of the sanitary sewerage system to minimize the transport of sanitary sewer overflows to surface waters with elevated bacteria densities. Sewer line backups, overflows and leaks commonly occur during periods of wet weather, creating a potential source of bacteria on land surface that may be transported to surface water via urban runoff. The Cities should work with sanitary sewerage system entities to prioritize maintenance and repair in areas contributing to bacteria loads in surface waters with elevated bacteria densities; ensure rapid response to cleaning up overflows; and developing sewer lateral maintenance and replacement programs for consideration by the appropriate local authority.

Provision C.14.a.vii requires the Cities to evaluate the potential bacteria-reduction benefit of prioritizing trash control efforts in areas discharging to waters with elevated bacteria densities. This Provision is intended to require Permittees to implement or enhance BMPs described in the Fact Sheet and Permit for Provision C.10 in areas that discharge to surface waters with elevated bacteria.

Provision C.14.a.viii. requires the Cities to monitor their receiving waters, outfalls, and stormwater catchments to identify sources of bacteria, i.e., through microbial source testing, observations, and fecal indicator bacteria measurements, and to evaluate effectiveness of controls and determine whether the bacteria water quality objectives

³⁰⁴ City of Kirkland, Pet Waste Bacteria, Monitoring, Outreach and Education (2020), p. 11. Available at: <https://www.kirklandwa.gov/files/sharedassets/public/public-works/2020-kcd-pet-waste-final-report.pdf>

³⁰⁵ <https://www.statesman.com/news/20190813/scoop-poop-dog-waste-on-greenbelts-affecting-more-than-bottom-of-your-shoes>

³⁰⁶ U.S. EPA, Reducing Animal Sources of Bacteria Restores Water Quality (2011).

and/or bacteria receiving water limitations are achieved. For the latter, it may be possible to show that bacteria water quality objectives exceedances occur but MS4 discharges do not cause or contribute to them. The regulatory authority and supporting information for monitoring are provided in the Fact Sheet for Provision C.8.

Identification of sources, evaluation of effectiveness of controls, and determination of compliance with bacteria receiving water limitations can be demonstrated through a monitoring program designed to answer the following logical questions:

- What is the spatial and temporal extent of dry weather flows in the MS4?
- Are indicators of human fecal material present in both dry and wet weather flows observed in the MS4?
 - If so, in which stormwater catchments are sources most prominent?
 - Where are the likely locations of these sources in the catchments?
 - What measures can be implemented to control these sources?
- Are water quality objectives being achieved during dry weather?
- Are water quality objectives being achieved during wet weather?

The required levels of implementation to answer these questions, e.g., location and number of sites, sampling events, frequencies, and methods are based on the monitoring program and information provided by the Cities in their Fecal Indicator Bacteria Monitoring and Source Identification Program (April 2022). The required monitoring provides an initial comprehensive and robust means to identify sources, evaluate effectiveness of controls, and determine compliance or progress towards compliance with bacteria receiving water limitations. Monitoring at the required numbers of monitoring sites, events, and frequencies may be sufficient to answer some of the questions for some areas in the Cities' jurisdictions. It is likely that the monitoring will have to be adapted to respond to the results of the required surveillance and monitoring. For example, the results could show that the bacteria exceedances in the receiving waters have been resolved or are worse and more extensive than is currently understood. In either case, different monitoring will be needed to respond to the new information. Since it is not possible to prescribe new monitoring requirements until the results of the required monitoring are known, the Cities are required to include proposed monitoring in the Mid-Permit Interpretive Report to be conducted through the remainder of the Permit term to answer the questions in C.14.a.viii.(1). The proposed monitoring must be as comprehensive, systematic, and robust as what is currently required while being commensurate with the need to address and resolve bacteria exceedances in the receiving waters. The Water Board will subsequently amend the Permit to include approved second phase monitoring requirements.

Provision C.14.a.ix. requires the Cities to conduct a comprehensive assessment of their bacteria source identification and control actions and determine whether discharges from their MS4s are causing or contributing to exceedances of bacteria water quality objectives in receiving waters after implementation of control measures required by C.14.a.i-vii. It is possible that implementation of these requirements in conjunction with C.14.a.viii monitoring requirements will result in compliance with bacteria receiving water limitation requirements, as discussed above in this Fact Sheet under Path to Compliance with Bacteria Receiving Water Limitations, but it is not possible to justify a date by which compliance must be achieved due to the modeling or quantitative analysis limitations discussed above and known and unknown uncertainties associated with identifying and controlling possible sources. Accordingly, C.14.a.xi sets an expectation to achieve compliance by the end of the permit term, June 30, 2022, but if compliance will not be achieved despite diligent efforts to identify and control sources and compliance with C.14.a.i-viii, those efforts, successes, and lessons learned should inform determination of additional or enhanced efforts and a schedule to implement additional or enhanced efforts to achieve receiving water limitations as soon as possible.

The required Mid-Permit Interpretive Report and Final Interpretive Report provide a means to demonstrate progress towards answering the monitoring program questions and achieving bacteria receiving water limitations, based on monitoring results and description of source identification and control efforts, to provide justification for monitoring program revisions, and to either provide documentation that bacteria receiving water limitations have been or will be achieved by the end of the Permit term, or if not, documentation and justification for new or enhanced efforts to achieve compliance in a timely manner and a proposed monitoring program to further inform and evaluate those efforts.

C.14.b. City of Pacifica and San Mateo County Bacteria Controls

This Permit Provision implements the San Pedro Creek and Pacifica State Beach Bacteria TMDL adopted by the Water Board on November 14, 2012, and approved by the U.S. EPA on August 1, 2013, which is the effective date of the TMDL. The water quality attainment strategy included in this TMDL requires urban runoff management agencies to implement controls and take other actions to reduce bacteria loads in urban runoff.

The TMDL contains allocations for urban runoff, including urban runoff associated with MS4s and Caltrans facilities. The allocations are the same as the Numeric Targets and are expressed in terms of allowable exceedances of single-sample objectives.

This provision is consistent with 2014 U.S. EPA Memo³⁰⁷ providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear actions to achieve bacteria reductions necessary to achieve receiving water limits. The timeline for achieving wasteload allocations for Pacifica State Beach is by August 1, 2021 (8 years from the TMDL effective date) and by August 1, 2028 for San Pedro Creek (15 years from the TMDL effective date).

Provision C.14.b.i requires the Pacifica and San Mateo Permittees to implement control measures and education and outreach activities to achieve bacteria load reductions, such as: prohibit potential illicit discharges to the storm drain from the sanitary sewer collection system; repair the fence along the Crespi Canal and clean up trash from the Canal; address bacteria discharges from horse facilities; maintain dog waste-clean-up signs, waste bag dispensers, and trash receptacles; implement a visual inspection and clean-up plan for high dog waste accumulation areas; and implement an enhanced public outreach and education campaign for managing pet waste. This provision is critical to the successful implementation of the urban runoff requirements for the TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds or locations, 2) a commitment to an implementation schedule, and 3) the quantification of the benefit resulting from control measure implementation.

Provision C.14.b.ii requires the Pacifica and San Mateo Permittees to monitor water quality to assess attainment of wasteload allocations. To comply with this requirement, the Pacifica and San Mateo Permittees are required to monitor bacteria levels in San Pedro Creek and at Pacifica State Beach and report the results to the Water Board. Further, they must provide an annual report of the quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives. This provision is necessary to determine whether wasteload allocations are being attained, so additional or enhanced measures are implemented, if necessary.

Provision C.14.b.iii requires the Pacifica and San Mateo Permittees to conduct a water quality monitoring program to 1) better characterize bacteria sources and 2) evaluate the effectiveness of the bacteria control measures. The results of the monitoring shall be reported to the Water Board on an annual basis. The findings from these assessments will be used throughout this and future Permit terms to revise, refocus, and enhance bacteria control measures to make them as effective and efficient as possible. Future permits will be based on an updated assessment of bacteria sources and control measure effectiveness. This provision is necessary to allow the Pacifica and San Mateo Permittees to identify and implement effective BMPs in an efficient manner.

C.14.c. City of San Mateo Marina Lagoon Beaches Bacteria Controls

³⁰⁷ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

This Permit Provision implements the San Francisco Bay Beaches Bacteria TMDL adopted by the Water Board April 13, 2016 and approved by the U.S. EPA on February 23, 2017. The State Office of Administrative Law approved the TMDL on December 13, 2016, which is the effective date of the TMDL. The implementation plan included in this TMDL requires urban runoff management agencies to implement controls and take other actions to reduce bacteria loads in urban runoff.

The TMDL contains allocations for urban runoff associated with MS4s in the City of San Mateo (City). The allocations are the same as the Numeric Targets and are expressed in terms of a geometric mean for Enterococcus. The Numeric Targets must be achieved in Parkside Aquatic and Lakeshore beaches on Marina Lagoon.

This provision is consistent with 2014 U.S. EPA Memo (see C.14.b) providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear actions to achieve bacteria reductions necessary to achieve receiving water limits. The TMDL requires the City to attain its wasteload allocation by taking a phased approach in which additional or enhanced actions are required if initial implementation actions do not result in attainment of the TMDL within five years.

Provision C.14.c.i. requires the City to implement control measures and education and outreach activities to achieve bacteria load reductions. The City is also required to report on the control measures on an annual basis. This provision is critical to the successful implementation of the urban runoff requirements for the TMDL. This provision requires the actions described above in this Fact Sheet for Provisions:

- C.14.a.1 and C.14.a.2, to control potential bacteria discharges from the sources as described above for these Provisions.
- C.14.a.4 and C.14.a.5, because pets and controllable wildlife were found to be significant sources to Parkside Aquatic and Lakeshore beaches.
- C.14.a.6, because sanitary sewer overflows were found to be the greatest potential source of bacteria to Parkside Aquatic and Lakeshore beaches.
- C.14.a.8, to monitor as describe in the Fact Sheet above.

Provision C.14.c.ii. requires the City to implement additional BMPs to reduce bacteria loads if the wasteload allocation is not met by December 13, 2021. The TMDL calls for a phased approach to achieving the wasteload allocation, wherein additional BMPs must be implemented if targets are not achieved after implementing Phase 1 actions within five years of the TMDL effective date. This provision calls for Phase 2 actions and is critical to the successful implementation of the urban runoff requirements for the TMDL.

Provision C.14.c.iii. requires the City to prepare a plan of additional actions to take if wasteload allocations are not met by December 13, 2026, six months before the end of the Permit Term. The plan shall include an assessment of bacteria sources with a schedule and description of additional control measures or increased levels of existing

control measures that will be implemented to attain bacteria water quality objectives. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.

C.14.d. City of Half Moon Bay and San Mateo County Bacteria Controls

This Permit Provision implements the TMDL for Bacteria in Beaches in Pillar Point Harbor and Venice Beach adopted by the Water Board February 10, 2021. The implementation plan included in this TMDL requires urban runoff management agencies to implement controls and take other actions to reduce bacteria loads in urban runoff.

The TMDL contains wasteload allocations for urban runoff, including urban runoff associated with MS4s in the City of Half Moon Bay (City) and San Mateo County (County). The wasteload allocations are the same as the Numeric Targets and are expressed in terms of a geometric mean for Enterococcus. The Numeric Targets must be achieved in Venice Beach in the City and in the following beaches in Pillar Point Harbor (County): Inner Harbor Beach, Mavericks Beach, Pillar Point Marsh Beach, Yacht Club Beach, Capistrano Beach and Beach House Beach.

This provision is consistent with 2014 U.S. EPA Memo³⁰⁸ providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear actions to achieve bacteria reductions necessary to achieve receiving water limits. The TMDL requires the City and County to attain wasteload allocations by taking a phased approach in which additional or enhanced actions are required if initial implementation actions do not result in attainment of the TMDL within five years.

Provision C.14.d.i. requires the City of Half Moon Bay (City) and County of San Mateo (County) to submit a written plan for and to implement control measures and education and outreach activities to achieve bacteria load reductions, including the elements described in the Fact Sheet above for Provisions C.14.a.1 through C.14.a.8. The City and County are required to report on the control measures on an annual basis. This provision is critical to the successful implementation of the urban runoff requirements for the TMDL.

Provision C.14.d.ii. requires the City and County to obtain and evaluate water quality monitoring data for bacteria at the beaches included in this TMDL, and to submit a report on the data annually. The monitoring and reporting requirements of Provision C.14 are authorized under Clean Water Act § 308, 40 C.F.R. §§ 122.26(d)(2), 122.41(h), (j) and (l), 122.42(c), 122.44(i) and 122.48, and Water Code § 13383.

Provision C.14.d.iii. requires the City and County to prepare a plan of additional actions to take if wasteload allocations are not met within five years of the TMDL effective date, as called for in the TMDL. The plan shall include an assessment of

³⁰⁸ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

bacteria sources; a summary of control actions taken; and a schedule and description of additional control measures or increased levels of existing control measures that will be implemented to attain bacteria water quality objectives. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.

C.15. Exempted and Conditionally Exempted Discharges

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators “to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain non-stormwater discharges. Illicit discharge means “any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities” (40 CFR 122.26(b)(2)).

Fact Sheet Findings in Support of Provision C.15.

C.15-1 Prohibition A.1 effectively prohibits the discharge of non-stormwater discharges into the storm sewer system. However, certain types of non-stormwater discharges may be exempted from this prohibition if they are unpolluted and do not violate water quality standards. Other types of non-stormwater discharges may be conditionally exempted from Prohibition A.1 if the discharger employs appropriate control measures and BMPs prior to discharge, and monitors and reports on the discharge.

C.15-2 Removal of Conditional Exemption for Planned and Unplanned Discharges of the Potable Water System

MRP 1 contained requirements for planned and unplanned discharges from the potable water systems owned and/or operated by Permittees who are water purveyors. The discharges were conditionally exempted provided the Permittees complied with the BMP, monitoring, and reporting requirements in the Previous Permit. The requirements were necessary because potable water discharges contain chlorine and chloramines, two very toxic chemicals to aquatic life, and can cause erosion, scouring of stream and creek banks, and sedimentation. The conditional exemption and requirements were included as an interim measure until such time an NPDES permit regulating potable water discharges was adopted. The State Water Board adopted the statewide General NPDES Permit for Drinking Water System Discharges to Waters of the United States, Order WQ 2014-0194-DWQ (Potable Water General Permit) on

November 18, 2014.³⁰⁹ Therefore, the conditional exemption and requirements for planned and unplanned discharges from the Permittees' potable water systems is no longer necessary. The Permittees should seek coverage under the Potable Water General Permit for their potable water system discharges. NPDES-permitted discharges, such as those permitted by the Potable Water General Permit, are exempt from Discharge Prohibition A.1.

Specific Provision C.15. Requirements

Provision C.15.a. Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are exempted from Discharge Prohibition A.1 if such discharges are unpolluted and do not violate water quality standards. If any exempted non-stormwater discharge is identified as a source of pollutants to receiving waters, the discharge shall be addressed as a conditionally exempted discharge and must meet the requirements of Provision C.15.b.

Provision C.15.b. Conditionally Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are conditionally exempted from Discharge Prohibition A.1 if they are identified by Permittees or the Executive Officer as not being sources of pollutants to receiving waters. To eliminate adverse impacts from such discharges, project proponents shall implement appropriate pollutant control measures and BMPs, and where applicable, shall monitor and report on the discharges in accordance with the requirements specified in Provision C.15.b. The intent of Provision C.15.b's requirements is to facilitate Permittees in regulating these non-stormwater discharges to the storm drains since the Permittees have ultimate responsibility for what flows in those storm drains to receiving waters. For all planned discharges, the nature and characteristic of the discharge must be verified prior to the discharge so that effective pollution control measures are implemented, if deemed necessary. Such preventative measures are cheaper by far than post-discharge cleanup efforts.

- **Provision C.15.b.i.(1). Pumped Groundwater from Non-Drinking Water Aquifers.** These aquifers tend to be shallower than drinking water aquifers and more subject to contamination. The wells must be purged prior to sample collection. Since wells are purged regularly, this section of the Permit requires twice a year monitoring of these aquifers. Discharges of pumped groundwater from nondrinking water aquifers, which are owned and/or operated by Permittees who pump groundwater as drinking water, are conditionally exempted as long as the discharges meet the requirements in this section of the Permit. U.S. EPA Method 8260B and 8270C for volatile and semi-volatile organic compounds have been replaced with U.S. UPA Method 624.1 and 625.1, respectively, to be consistent with 40 C.F.R. Part 136 (p. 4).

³⁰⁹ https://www.waterboards.ca.gov/water_issues/programs/npdes/general_permits.html

- **Provision C.15.b.i.(2). Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains.** This section of the Permit encourages these types of discharges to be directed to landscaped areas or bioretention units, when feasible. If the discharges cannot be directed to vegetated areas, it requires testing to determine if the discharge is uncontaminated. Uncontaminated discharges shall be treated, if necessary, to meet specified discharge limits for turbidity and pH.

Updates have been made to the Provision C.15.b.i.(2)(b)(ii). U.S. EPA Method 8260B and 8270C for volatile and semi-volatile organic compounds have been replaced with U.S. EPA Method 624.1 and 625.1, respectively, to be consistent with 40 C.F.R. Part 136 (p. 4). Several of the reporting limits in the Provision C.15.b.i.(2)(b)(ii) Constituent Reporting Limit table have been updated or modified, to reflect the latest reissuance of the VOC and Fuel General Permit, NPDES Permit No. CAG912002 (Order No. R2-2017-0048, as amended by Order No. R2-2018-0050), which covers discharges from groundwater treatment facilities that extract or treat groundwater polluted by volatile organic compounds (VOCs), fuel leaks, fuel additives, or other related wastes (e.g., semi-volatile organic compounds [SVOCs], polycyclic aromatic hydrocarbons [PAHs], and metals).

- **Provision C.15.b.ii. Air Conditioning Condensate.** Small air conditioning units are usually operated during the warm weather months. The condensate from these units is uncontaminated and unlikely to reach a storm drain or waters of the State because it tends to be low in volume and tends to evaporate or percolate readily. Therefore, condensate from small air conditioning units should be discharged to landscaped areas or the ground. Commercial and industrial air conditioning units tend to produce year-round continuous flows of condensate. It may be difficult to direct a continuous flow to a landscaped area large enough to accommodate the volume. While the condensate tends to be uncontaminated, it picks up contaminants on its way to the storm drain and/or waters of the State and can contribute to unnecessary dry weather flows. Therefore, discharges from new commercial and industrial air conditioning units should be discharged to landscaped areas, if they can accommodate the continuous volume, or to the sanitary sewer, with the local sanitary sewer agency's approval. If none of these options are feasible, air conditioning condensate can be directly discharged into the storm drain. If descaling or anti-algal agents are used to treat the air conditioning units, residues from these agents must be properly disposed of.
- **Provision C.15.b.iii. Emergency Discharges of Firefighting Water and Foam.** According to 40 C.F.R §122.26, MS4 Permits may address discharges or flows from firefighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States. Discharges from firefighting activities are excluded from the definition of illicit discharges, but may be regulated where they are

significant contributors to water pollution.³¹⁰ This is consistent with U.S. EPA's treatment of firefighting discharges to small MS4s.³¹¹ U.S. EPA envisions that significance is determined with reference to the category of discharges, not individual fires.³¹²

At the same time, water quality impacts from individual fires illustrate the significance of the category of discharges. For instance, in April 2019, the discharge of firefighting foam through the storm drain to Codornices Creek in Berkeley caused a fish kill of at least 60 fish, including steelhead.³¹³

Potable water is also used to fight fires. In the Bay Area, chloramines are typically used to control pathogens in potable water, and they are toxic to aquatic life.³¹⁴ Discharges of chloraminated potable water to Bay Area receiving waters have caused fish kills.³¹⁵ As a result, discharges of chloraminated potable water used for firefighting have the potential to impact aquatic life, including by causing fish kills.

The Water Board observes the following: fish kills from potable water discharges almost every year; small volumes of potable water discharges (between 4,000 and 10,000 gallons) kill fish; and many species of fish (steelhead, rainbow trout, three-spine stickleback, Sacramento suckers, hitch, California roach, mosquitofish, green sunfish, bluegill, fathead minnows, sculpin, golden shiners) and crayfish have been killed by potable water discharges.

There are several recent examples of potable water discharges that resulted in fish kills (and fines) in the Bay Area, listed below. It is important to note that this list is inexhaustive. It includes all fines since 2007, but not all fish kills since 2007. That is because it excludes potable water discharges (resulting in fish kills) between 2018

³¹⁰ 40 C.F.R. 122.26(d)(2)(iv)(B)(1)

³¹¹ 64 Fed. Reg. 68722, 68756: "[D]ischarges or flows from fire fighting activities are excluded from the definition of illicit discharge and only need to be addressed where they are identified as significant sources of pollutants to waters of the United States."

³¹² 64 Fed. Reg. 68722, 68758: "If an MS4 is concerned that flows from firefighting are, as a category, contributing substantial amounts of pollutants to their system, they could develop a program to address those flows prospectively. The program may include an analysis of the flow from several sources, steps to minimize the pollutant contribution, and a plan to work with the sources of the discharge to minimize any adverse impact on water quality. During the development of such a program, the MS4 may determine that only certain types of flows within a particular category are a concern, for example, fire fighting flows at industrial sites where large quantities of chemicals are present."

³¹³ McKenney, Hope. Fire Retardant Linked to Fish Deaths in Berkeley Creek Identified by State Fish and Wildlife, *KQED* April 12, 2019; accessed at <https://www.kqed.org/news/11739651/fire-retardant-linked-to-fish-deaths-in-berkeley-creek-identified-by-state-fish-and-wildlife>.

³¹⁴ SFPUC, September, 2010. *Questions and Answers Regarding Chloramine*. Accessed on August 30, 2020, from: https://www.sfdph.org/dph/files/EHSdocs/ehsWaterdocs/Chloramine/SFDPH_Chloramine_in_Drinking_Water_Document_Collection.pdf

³¹⁵ Aaron Kinney, November 18, 2014. "Cal Water hit with \$3 million penalty for fish-killing San Mateo pipe leak." San Jose Mercury News.

and 2022 which normally would have resulted in fines, because the Water Board chose not to enforce; review of the Water Board's Enforcement Policy resulted in coordination with water purveyors to improve their asset management programs in lieu of penalties.

- (1) Cal Water Service Company, \$200,000 ACL, 137,640 gallon discharge to Polhemus Creek in September 2007, killed 21 steelhead + 2 stickleback (R2-2009-0006);
- (2) EBMUD, \$72,000 ACL, 4,200 gallon discharge to Sausal Creek in August 2010 killed 25+ rainbow trout and 23,400 gallon discharge to Reliez Valley Creek in January 2010 with unknown impact. (R2-2012-0008);
- (3) CalTrans, \$31,250 ACL, 8,250 gallon discharge to Bear Gulch Creek in May 2011, resulted in fish kill (R2-2012-0009);
- (4) SFPUC, \$608,310 ACL for 4 violations, including a 37,500 gallon discharge to San Mateo Creek in Jan 2011 killing 5 rainbow trout and 16,500 gallon discharge to San Mateo Creek in October 2012 killing 64 fish including 28 steelhead. (R2-2014-1003);
- (5) CA Water Service Company, \$1,020,000 ACL for 8,207,560-gallon discharge to Polhemus Creek and San Mateo Creek in October 2013 killing 231 fish including rainbow trout and 1 crayfish (R2-2016-1012);
- (6) Town Hillsborough, \$221,030 ACL for 153,000-gallon discharge to San Mateo Creek in September 2015 killing 505 fish including threatened species under the Endangered Species Act (R2-2017-1028);
- (7) EBMUD, \$893,190 ACL for 3 discharges: (1) a 72,000-gallon discharge to San Ramon Creek in October 2015 killing 104 fish including mosquitofish, Sacramento suckers, hitch, and California roach; (2) 2,200,000-gallon discharge to Las Trampas Creek in November 2015 killing 17 California roach and 2 Sacramento suckers; and (3) 191,400-gallon discharge to San Ramon Creek killing 140 California roach, 100 three-spined stickleback, 75 mosquitofish, 6 green sunfish, 4 bluegill, and 2 fathead minnows (R2-2017-1031);
- (8) Marin Municipal Water District, \$129,250 ACL for 105,000-gallon discharge to San Anselmo Creek in July 2016 killing an unquantified number of fish that included sculpin, California roach, and rainbow trout or steelhead (R2-2018-1004);
- (9) Dublin-San Ramon Services District, \$129,250 ACL for 61,000-gallon discharge to Alamo Creek in September 2017 killing 130 golden shiners and 1 bluegill (R2-2018-1006);
- (10) San Jose Water Company, \$75,000 ACL for 111,250-gallon discharge to Babb Creek in September 2017 killing 565 fish (R2-2018-1011); and

(11) City of San Mateo, \$73,700 ACL for 7,720-gallon discharge to San Mateo Creek in May 2021 killing 44 steelhead, 26 prickly sculpin, 19 Sacramento suckers, 8 threespine stickleback, and 1 crayfish (R2-2022-1001).

The Berkeley incident and the use of chloraminated potable water for firefighting demonstrate that flows from firefighting activities can contribute substantial amounts of pollutants to receiving waters if not managed. As a result, the Water Board has determined that firefighting discharges can contribute significant pollution to receiving waters and require management by Permittees.

This Provision addresses discharges of firefighting water and foam associated with emergency firefighting activities. Discharges of firefighting water and foam associated with non-emergency firefighting activities such as training are neither exempted nor conditionally exempted by this Provision; they are prohibited pursuant to Discharge Prohibition A.1. If there are discharges to storm drain systems or watercourses of firefighting water and/or foam (or other non-stormwater) associated with non-emergency (e.g., training) firefighting activities, which would violate Discharge Prohibition A.1, then Permittees must comply with the reporting specified in Provision C.23.c.

This Provision acknowledges that in cases of emergency discharge, such as from firefighting and disasters, priority of efforts shall be directed toward life, property, and the environment, in that order. Therefore, Permittees are required to implement BMPs only when they do not interfere with immediate emergency response operations or impact public health and safety.

The requirements in Provision C.15.b.iii ensure that Permittees reduce or eliminate the significant pollution from firefighting foam and water discharged during firefighting emergencies, without compromising the ability of firefighting personnel to protect lives and property. Permittees are required to evaluate and improve the efficacy of their BMPs and SOPs for the containment and cleanup of firefighting water and foam discharged during firefighting emergencies. These discharges are significant contributors to pollution in waters of the U.S., for the following reasons:

- (1) Potable water is used in emergency firefighting situations, often in combination with firefighting foams. Potable water discharges contribute pollution to water quality in receiving waters because they contain chlorine or chloramines, two chemicals that are toxic to aquatic life. Such discharges can also cause erosion and scouring of stream and creek banks and can result in sedimentation if effective BMPs are not implemented.
- (2) Discharges of Class A firefighting foams contribute pollution to water quality in receiving waters, because they contain constituents that are acutely toxic to

aquatic species.^{316,317,318,319} In April 2019, a vehicle fire in the City of Berkeley resulted in the discharge of 4,500-12,000 gallons of potable water and 20 gallons of a Class A firefighting foam (for which the primary/active ingredient is a hydrocarbon surfactant; 96-hr LC₅₀ Rainbow Trout = 16.8 mg/L) into the City's MS4, which discharged to Codornices Creek and resulted in the deaths of at least 63 Central Coast California Steelhead Trout and 1 sculpin. Similar discharges of other Class A foams with comparable acute aquatic toxicity³¹⁶ are likely to cause similar impacts.

- (3) Class B firefighting foams are generally divided into two types, fluorinated and fluorine-free. Discharges of both types of Class B firefighting foams³²⁰ contribute pollution to water quality in receiving waters, because they contain constituents that are toxic to aquatic species. Fluorine-free Class B foams do not contain PFAS, but are still acutely toxic to aquatic species³²¹ because their primary active ingredient is typically a hydrocarbon surfactant.³²² Fluorinated Class B foams typically contain perfluoroalkyl and polyfluoroalkyl substances (PFAS), which are environmentally persistent and toxic to both human health and aquatic species.^{323,324,325}
- (4) California Senate Bill 1044,³²⁶ approved by the Governor on September 29, 2020, and effective January 1, 2022, prohibits the sale and use of Class B firefighting foams that contain intentionally added PFAS chemicals, with phaseouts for certain continued applications of such foams. This Provision requires the Permittees to recommend reporting requirements (for example,

³¹⁶ <https://www.fs.fed.us/rm/fire/wfcs/sds.php>

³¹⁷ <https://www.fs.fed.us/rm/fire/wfcs/documents/NONCONFIDENTIAL-EcoRA-Foams%20June2020draft.pdf>

³¹⁸ [https://www.fs.fed.us/rm/fire/wfcs/documents/307b_Wildland%20Foam_Master%20Draft%20\(for%20Public%20release\).pdf](https://www.fs.fed.us/rm/fire/wfcs/documents/307b_Wildland%20Foam_Master%20Draft%20(for%20Public%20release).pdf)

³¹⁹ <https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/rotenone/appendix-f.pdf>

³²⁰ Class B firefighting foams are commercial surfactant solutions that are used for fire suppression (in particular, of flammable liquids like gasoline, oil and jet fuel) and flammable vapor suppression at military installations and civilian facilities and airports, as well as at petroleum refineries and bulk storage facilities, and chemical manufacturing plants and storage facilities. Municipal fire departments also use Class B firefighting foams for emergency response. Accessed on August 2, 2021, from: https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=148

³²¹ https://store.danko.net/files/documents/SDS_PC-1-Fluorine-Free-OSHA-WHMIS-GHS_2019-09-13_EN-23.pdf. Web. Viewed <August 2, 2021>

³²² <https://serdp-estcp.org/Program-Areas/Weapons-Systems-and-Platforms/Waste-Reduction-and-Treatment-in-DoD-Operations/WP-2738/WP-2738>. Web. Viewed <August 2, 2021>

³²³ <https://www.epa.gov/pfas/basic-information-pfas>

³²⁴ https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201920200SB1044

³²⁵ <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas>

³²⁶ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB1044

reporting if any of the exemptions in Senate Bill 1044 are invoked by parties acting within Permittees' jurisdictions, such that firefighting foams containing PFAS chemicals are used during firefighting emergencies) then implement those recommendations. Reporting on discharges of PFAS and other foams is necessary to ensure transparency about continued PFAS use within the Permit region, and transparency about discharges of other firefighting foams which also have adverse environmental impacts.

Provision C.15.b.iii.(2), Regional Coordination, requires the Permittees to convene a regionwide Firefighting Discharges Working Group (Working Group) together with Water Board staff, to identify and evaluate opportunities to reduce the impacts of emergency discharges to the MS4 associated with firefighting activities. The Permittees will collectively (e.g., through the Working Group) evaluate the adequacy of existing BMPs, SOPs and resources used for the containment and cleanup of firefighting foam discharged during firefighting emergencies, culminating in a Firefighting Discharges Report by September 30, 2025, containing recommendations to the Permittees regarding the implementation of BMPs, SOPs, and resources used for the containment and cleanup of firefighting water and foam discharged during firefighting emergencies. A footnote in the Provision clarifies that the Working Group does not have to review every single Permittee's BMPs/SOPs/resources, but that the Working Group can review a representative subset of them. Regarding resources used to determine if and how firefighting water and foam discharged during emergencies will impact receiving waters (e.g., maps), the intent is not to task firefighting personnel with developing/providing/utilizing those resources at each emergency on the spot, but instead, to preemptively consider the availability, need, and utility of the resources, then incorporate the resources that will be helpful (i.e., helpful for mitigating adverse environmental impacts) into the collective municipality's BMPs and SOPs. The Fact Sheet, below, gives examples of BMPs and SOPs that the Working Group should consider. In addition, the Working Group should consider identifying areas where more information or effective BMPs and SOPs may be needed or desirable, if it or they are not yet otherwise available, and as noted above the Group is expected to include reporting recommendations associated with firefighting discharges, and particularly firefighting foams. The requirement for a region-wide Working Group and for the report will help to create administrative efficiencies by allowing Permittees to pool resources and avoid the duplication of work that might occur if they studied these issues individually. The Water Board may consider requiring the Working Group to continue to convene on an ongoing basis in subsequent permit terms, to update the recommendations in the Firefighting Discharges Report as needed.

The Permittees estimate that a portion of fires are responded to (for containment and cleanup) not with municipal resources, but by private contractors. Therefore, Provision C.15.b.iii.(2) additionally requires the Permittees to collectively (e.g., through the Working Group): 1) develop (and revise on an ongoing basis, as-

needed) outreach materials regarding BMPs and SOPs for the containment and cleanup of discharges of firefighting water and foam, for private contractors hired by either Permittees or by private parties to conduct firefighting, containment and cleanup within Permittees' jurisdictions, because a significant portion of fires on private properties are responded to (for containment and cleanup) by private contractors hired by the owners of those private properties. Separately, it is also true that there are some private firefighting crews within the region, such as at large industrial sites like the Chevron refinery in Richmond; the Working Group is encouraged to discuss coordination with these private firefighting crews, as needed (for example, if it is likely that there are emergency discharges from such sites to Permittees' MS4s).

This provision also requires the Permittees to collectively (e.g., through the Working Group) evaluate the environmental impacts of foams and make recommendations about which foams are least environmentally harmful while still performing well. Certain firefighting foams appear to be less environmentally harmful than others (within and between Class A and Class B foams).³²⁷ Then the Permittees are instructed to collectively (e.g., through the Working Group) develop SOPs for the use of those foams, and coordinate with relevant federal, state and local entities, such as the California Department of Forestry and Fire Protection, because those entities may be undergoing similar exercises and may be able to share information that could inform these and other tasks required by Provision C.15.b.iii.(2).

The Working Group could consider addressing reasonably related issues that are beyond the scope of this Provision, such as addressing prohibited (not conditionally-exempted) discharges associated with non-emergency firefighting activities, such as training.

Provision C.15.b.iii.(3), Ongoing Implementation Practices, requires the Permittees to implement the recommendations, to the extent they apply to Permittees' individual firefighting programs, that are included in the Firefighting Discharges Report developed pursuant to Provision C.15.b.iii.(2)(b).

Provision C.15.b.iii.(4), Required BMPs, requires Permittees to implement BMPs and SOPs for the containment and cleanup of discharges of firefighting water and foam associated with emergency firefighting activities, only to the extent that the implementation of such BMPs and SOPs does not jeopardize the ability of firefighting personnel to protect public health and safety. If and when the recommended BMPs and SOPs are implemented, they are likely to prevent or

³²⁷ Fluorine-free foams have been on the market for approximately twenty years, though even these foams have toxic effects, as the fish kill in Berkeley shows. Clean Production Action, a nonprofit based in Somerville, Massachusetts, has developed an environmental screening tool for firefighting foams, which could be a starting point for the Working Group. See Thorpe, Bev. "GreenScreen Certified for Fire Fighting Foam Launched" (Sept. 2020) (accessible at: <https://www.cleanproduction.org/resources/entry/fff-launched>).

reduce impacts to receiving waters that would otherwise be caused by the discharges associated with the emergency firefighting activities.

BMPs and SOPs may include, but are not limited to, the following:

- (1) Plugging of the storm drain collection system for temporary storage;
- (2) Dechlorination prior to discharge to the MS4 and receiving waters;
- (3) Proper disposal of water and foam according to jurisdictional requirements;
- (4) Use of the least environmentally harmful firefighting foams;
- (5) Avoiding the use of firefighting foam when it is not necessary;
- (6) Use of the proper firefighting foam depending on the type of fire;
- (7) When firefighting foam is used, limiting the amount used;
- (8) Communication and coordination between both municipal responding departments (e.g., fire, public works, environmental services) and external responding agencies (e.g., CalFire, special district fire departments);
- (9) Categorizing fire types and establishing expectations for BMP and SOP implementation based on that categorization; and
- (10) Discouraging the use of firefighting foam where it may discharge to receiving waters, particularly receiving waters that may have sensitive habitat, such as habitat for special status species, including certain salmonids.

These recommended BMPs and SOPs will be discussed in the Firefighting Discharges Working Group, including which scenarios they are appropriate for.

Provision C.15.b.iii.(5) requires the Permittees to implement the reporting that is recommended by the Firefighting Discharges Working Group in the Firefighting Discharges Report. Provision C.15.b.iii.(2)(a)(vii) specifies the reporting requirements that Permittees must consider, including what type of information will be reported, as well as how reporting will be triggered, such as: in the case that any amount of any firefighting foam discharges to a receiving water,³²⁸ in the case that five or more gallons of any firefighting foam concentrate discharges to the MS4, regardless of whether or not it impacts a receiving water,³²⁹ and in the case that any amount of PFAS-containing firefighting foam concentrate is used during an emergency, regardless of whether it discharges to the MS4 or a receiving water. The purpose of these additional reporting requirements is to increase transparency about

³²⁸ Pursuant to California Fish and Game Code, Section 5650, there is no minimum reportable quantity for discharges of firefighting foam to waters of the state.

https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC§ionNum=5650

³²⁹ For firefighting personnel, the reportable quantity of HAZMAT released to the environment is five gallons. Additionally, five gallons of firefighting foam is the size of a typical concentrated foam container.

the use of and discharges of non-stormwater to MS4s and receiving waters, as well as to provide direct feedback on the Permittees' implementation of Provision C.15.b.iii.

The Working Group should also discuss notification of the California State Warning Center and the California Department of Fish and Wildlife, for discharges to marine waters (pursuant to CGC 8670.25.5 and 8670.26, FWPCA 311, 33 CFR 153.203, and 40 CFR 302.6), and for discharges to non-marine waters (pursuant to 23 CCR 2250(a), HSC 5411, CWC 13271(a)).

The Water Board may consider including more specific reporting requirements in a future Permit term, based on the reporting recommendations (and the Permittees' implementation of those recommendations) in the Firefighting Discharges Report.

- **Provision C.15.b.iv. Individual Residential Car Washing.** Soaps and automotive pollutants such as oil and metals can be discharged into storm drains and waterbodies from individual residential car washing activities. However, it is not feasible to prohibit individual residential car washing because it would require too much resources for the Permittees to regulate the prohibition. This section of the Permit requires Permittees to encourage residents to implement BMPs such as directing car washwaters to landscaped areas, using as little detergent as possible, and washing cars at commercial car washing facilities.
- **Provision C.15.b.v. Swimming Pool, Hot tub, Spa, and Fountain Water Discharges.** These types of discharges can contain high levels of chlorine and copper. Permittees shall prohibit the discharge of such waters that contain chlorine residual, copper algaecide, filter backwash, or other pollutants to the storm drains or to waterbodies. High flow rates into the storm drain or a waterbody could cause erosion and scouring of the stream or creek banks. These types of discharges should be directed to landscaped areas large enough to accommodate the volume or to the sanitary sewer, with the local sanitary sewer's approval. If these discharge options are not feasible and the swimming pool, hot tub, spa, or fountain water discharges must enter the storm drain, they must be dechlorinated to non-detectable levels of chlorine and they must not contain copper algaecide. Flow rate should be regulated to minimize downstream erosion and scouring. We strongly encourage local sanitary sewer agencies to accept these types of non-stormwater discharges, especially for new and rebuilt ones where a connection could be achieved with marginal effort. This provision also requires Permittees to coordinate with local sanitary agencies in these efforts.
- **Provision C.15.b.v.i. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering.** Fertilizers and pesticides can be washed off of landscaping and discharged into storm drains and waterbodies. However, it is not feasible to prohibit excessive irrigation because it would require too much resource for the Permittees to regulate such a prohibition. It is also not feasible for individual Permittees to ban the

use of fertilizers and pesticides. This section of the Permit requires Permittees to promote and/or work with potable water purveyors to promote measures that minimize runoff and pollutant loading from excess irrigation, such as conservation programs, outreach regarding overwatering and less toxic options for pest control and landscape management, the use of drought tolerant and native vegetation, and to implement appropriate illicit discharge response and enforcement for ongoing, large-volume landscape irrigation runoff to the storm drains.

C.16. Discharges to Areas of Special Biological Significance

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amendment to the Ocean Plan on October 16, 2012, and the plan was subsequently approved by the State Office of Administrative Law and U.S. EPA. The State Water Board is responsible for reviewing the Ocean Plan water quality standards and for modifying and adopting standards in accordance with CWA section 303(c)(1) and CWC section 13170.2. Pursuant to CWA sections 13263 and 13377, this Permit implements the Ocean Plan. In accordance with the Ocean Plan, the State Water Board granted an exception to the prohibition of stormwater discharges to Areas of Special Biological Significance (ASBSs), as discussed further below.

Fact Sheet Findings in Support of Provision C.16.

- C.16-1** The Ocean Plan prohibits the discharge of waste to designated ASBSs. ASBSs are designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. On March 20, 2012, the State Water Board approved Resolution No. 2012-0012, approving a general exception to the Ocean Plan prohibition against discharges to ASBSs for certain nonpoint source discharges and NPDES-permitted municipal storm water discharges (ASBS Exception), as long as those discharges are covered under an appropriate authorization to discharge, such as this Order and comply with the Special Protections contained in Attachment B (Special Protections) to that resolution, among other requirements. The ASBS Exception was subsequently amended by State Water Board Resolution No. 2012-0031, which required pollutant reductions to be achieved within six years, in accordance with ASBS Compliance Plans.
- C.16-2** This provision applies to discharges from the County of San Mateo into the James V. Fitzgerald Marine Reserve ASBS. The provision authorizes the County of San Mateo's stormwater discharge as set forth in the provision and implements the Ocean Plan and the exceptions granted under it by the State Water Board to allow the County of San Mateo to discharge stormwater into the ASBS. The requirements of the Provision are from the ASBS Exception and its Special Protections, which are incorporated into the Order as Attachment F.
- C.16-3** The County of San Mateo began development of the Fitzgerald ASBS Pollution Reduction Program in 2011 to comply with the ASBS Exception. The program

is led by the San Mateo County Department of Public Works in collaboration with the San Mateo County Resource Conservation District and the San Francisco Estuary Institute. The project includes implementation of targeted stormwater BMPs, water quality studies, BMP effectiveness monitoring, and education and outreach.

- C.16-4** In addition to these efforts, the Water Board has developed a Water Quality Improvement Plan for Bacteria in San Vicente Creek,³³⁰ which is tributary to the Fitzgerald ASBS. In 2016, the Water Board also delisted the Fitzgerald Marine Reserve Beach for bacteria from the 303(d) List based on water quality improvements from BMP implementation, identification and removal of illicit septic system connections, and education and outreach activities.

³³⁰ San Francisco Bay Regional Water Board, "Supporting Implementing a Water Quality Improvement Plan to Achieve Water Quality Objectives for Bacteria in San Vicente Creek, and Recommending Delisting of the Fitzgerald Marine Reserve for Bacteria Pursuant to Section 303(d) of the Clean Water Act," Resolution No. R2-2016-0024.

C.17. Discharges Associated with Unsheltered Homeless Populations

Legal Authority

Broad and Specific Legal Authority: CWA §§ 308(a), 402(p)(3)(B)(ii-iii); CWC §§ 13377, 13263, and 13383; 40 CFR § 122.26(d)(1)(v)(B); 40 CFR § 122.26(d)(2)(i)(B, C, D, E, and F); and 40 CFR § 122.26(d)(2)(iv); Basin Plan Discharge Prohibitions 7, 8, and 15; and Statewide Prohibition on Trash: “The discharge of trash to surface waters of the State or the deposition of trash where it may be discharged into surface waters of the State is prohibited.”

Fact Sheet Findings in Support of Provision C.17.

Driven in part by a lack of affordable housing and the high cost of living, a significant number of Bay Area residents are experiencing homelessness. That number increased markedly during MRP 2. For example, according to the latest Point-in-Time counts, between 2017 and 2019, the South Bay, East Bay, and the San Francisco Peninsula saw an approximate 25 percent increase (with individual increases of 17 to 43 percent) in their unsheltered homeless populations. Discharges associated with people experiencing unsheltered homelessness, including human waste and trash, are unauthorized discharges that are prohibited under the MRP. Such discharges are a significant water quality concern because they adversely impact water quality and public health (through the spread of disease). At the same time, these water quality and sanitation issues can be difficult to address because sanitation services can be challenging to provide and homeless populations may not always be receptive to the services being provided. In addition, while longer-term measures to address unsheltered homelessness, such as the provision of housing and supportive services may over time reduce problematic discharges, they do not effectively reduce ongoing discharges over the short term. Thus, actions to reduce and/or eliminate MS4 discharges associated with unsheltered homelessness are necessary to prevent and minimize impacts to water quality and public health. Such actions also can improve overall water quality and sanitary conditions for people experiencing unsheltered homelessness.

In 2015, the Water Board adopted Resolution No. R2-2015-0024, which identified discharges of trash and human waste from homeless encampments as significant water quality and public health concern. The resolution encouraged municipalities to consider water quality issues while addressing the broader social issue of homelessness and undertake efforts to prevent or eliminate discharges from homeless encampments. The resolution further recommended that municipal efforts “...include clear and measurable goals for preventing trash and human waste from discharging” to receiving waters. The resolution also affirmed the Board’s authority to issue cleanup and abatement

orders or waste discharge requirements to regulate discharges associated with homeless encampments.

Since adoption of the resolution, some Bay Area municipalities have made progress towards controlling discharges associated with unsheltered homelessness under the Provision C.10 Direct Discharge Control Program. Although efforts under that program have provided benefit with respect to reducing discharges of trash and certain other pollutants, they have not fully addressed discharges associated with unsheltered homelessness that impact water quality. Furthermore, only five Permittees have an approved Direct Discharge Control Plan.

A number of Permittees are taking actions that help address problematic discharges. For example, East Palo Alto and Mountain View have established formalized RV encampments or RV safe parking areas where RV waste can be appropriately collected and disposed using mobile services. In Oakland, where the unsheltered homeless population increased to about 4,000 in 2020, an increase of about 63 percent from 2017,³³¹ the city has established formalized encampments and is directing resources into affordable housing with the aim of getting those who are willing into housing. In 2020, Oakland adopted a new ordinance regarding where homeless encampments could be located, and is also working to provide sanitary services and manage sites for RVs, and has been targeting services to encampments that are within 500 feet of waterways.³³² Similarly, San Jose has a dedicated outreach team that provides emergency shelter, meals, showers, and other basic needs while working to match individuals experiencing homelessness with an appropriate housing program. The City of San Jose also coordinates with Santa Clara Valley Water District to address discharges associated with unsheltered homelessness in and around creeks.

As noted above, the Bay Area population of people experiencing unsheltered homelessness has continued to grow, and is expected to grow further as eviction moratoria implemented during the COVID-19 pandemic expire. Meanwhile, outbreaks of *Shigella* and Hepatitis A, both spread through fecal-oral contact, among homeless people in California underscore the risks posed by unregulated discharges, particularly of untreated human waste, from encampments.³³³ To encourage Permittees' efforts, gain a better understanding of populations experiencing unsheltered homelessness, the location of encampments in relation to storm drain inlets and receiving waters,

³³¹ Rodriguez, October 21, 2020. Oakland Approves Rules to Restrict Homeless Encampments. U.S. News.

³³² Ibid.

³³³ Liu, et al. Communicable Disease Among People Experiencing Homelessness in California, in *Epidemiology and Infection* (2020).

water quality related impacts, and associated sanitation-related needs, and to better understand the portion of discharges that are being addressed by Permittee efforts, and the extent to which practices may be effective, Provision C.17 requires that Permittees use results from biennial point-in-time census surveys and related information (e.g., databases, complaint logs) to review and update municipalities' implementation practices.

To encourage regional coordination between cities, Caltrans, sanitary sewer agencies, flood control districts, and other agencies (e.g., railroads, non-governmental organizations), Provision C.17 requires that Permittees collectively develop a BMP report that identifies effective practices to address MS4 discharges associated with unsheltered homelessness that impact water quality. The clearing and abating of homeless encampments, in response to public complaints, can often result in the encampment simply moving to a different location and continuing the discharges in the new location. The intent of this BMP report is therefore to foster (and prioritize) regional collaboration that takes into account the transient nature of unsheltered homeless populations, and the inherent benefit to Permittees sharing knowledge and resources on proven and effective strategies to managing the associated discharges from homeless encampments that impact water quality. The three main components of this report include:

- (1) Identifying practices (e.g., outreach, cleanup, sanitation) that could be implemented by Permittees to address discharges associated with unsheltered homelessness that are impacting water quality;
- (2) Identifying regional and/or countywide efforts and implementation actions towards addressing discharges associated with unsheltered homelessness. Permittees should include recommendations for engaging in such efforts that aim to provide clean water and sanitation needs for the homeless population; and
- (3) Identifying practices implemented by municipalities during the COVID-19 pandemic to reduce the spread of the virus in homeless populations (such as providing temporary housing, etc.) that may have contributed towards a water quality benefit.

The tasks identified above are intended to assist Permittees in developing a framework for controlling and eliminating MS4 discharges associated with homeless encampments, and refining individual and collaborative best management practices (associated with unsheltered homelessness) to ensure the protection of water quality and public health. Practices that harm or criminalize unsheltered homeless residents, such as encampment sweeps, are discouraged under this provision. To evaluate BMP effectiveness, Provision C.17 requires that Permittees report on the control measures being

implemented, the approximate portion and locations of the unsheltered homeless population being served by those measures, and the portion (number of people) and location not reached, or not fully served by those measures. Examples of control measures include, but are not limited to, access to emergency shelters; the provision of social services, clean drinking water, and sanitation services; voucher programs for proper disposal of RV sanitary sewage; establishment of designated RV “safe parking” areas or formalized encampments with appropriate services; provision of mobile pump-out services; establishing and updating sidewalk/street/plaza cleaning standards for the cleanup and appropriate disposal of human waste; and establishing various cleanup or pickup programs within the Permittees jurisdiction, or at the countywide or regional level.

C.18. Control of Sediment Discharges from Coastal San Mateo County Roads

Legal Authority

This is a TMDL-derived Provision, for which the legal authority is cited in the Fact Sheet section on Provisions C.9-C.14.

Fact Sheet Findings in Support of Provision C.18

- C.18-1** This Permit Provision implements the Pescadero and Butano Creeks Watershed Sediment TMDL adopted by the Water Board June 13, 2018 and approved by the U.S. EPA on June 24, 2019. The implementation plan included in this TMDL requires San Mateo County to complete a roads assessment, including a prioritized list of road repair projects, stormproof unpaved roads, and implement other BMPs to reduce sediment in runoff from County roads in the Pescadero Creek and Butano Creek watersheds. A similar strategy is being developed for the San Gregorio watershed to address sediment impairment; thus, this Permit Provision includes the San Gregorio watershed as well. For the San Gregorio Creek watershed, the Water Quality Improvement Plan calls for San Mateo County to complete twenty percent of the sediment reductions actions described above by June 30, 2029, and fifty percent by 2032.
- C.18-2** The TMDL contains allocations for sediment loading from County road runoff expressed in tons per year and as a percentage of the natural background sediment load. Attainment of this allocation is required to achieve the Numeric Targets for the Pescadero and Butano Creek Watershed. Consequently, this provision is critical to the successful implementation of the sediment reduction requirements of the TMDL.

Specific Provision C.18 Requirements

Provision C.18.a Road Erosion Inventory requires the County to prepare a road erosion inventory to identify and prioritize actions to reduce road-related erosion from hydrologically connected County roads. Hydrologic connectivity refers to the length or proportion of a road that drains runoff directly to streams or other water bodies. The County is required to report on the road erosion inventory as part of the 2023 Annual Report.

Provision C.18.b Prioritized List and Schedule of Actions requires the County to develop a prioritized list and schedule of actions, such as culvert repair or replacement, to reduce road related sediment delivery to stream channels, based on the results of the Road Erosion Inventory conducted in Provision C.18.a. The County is required to submit the prioritized list and schedule of actions as part of the 2023 Annual Report.

Provision C.18.c Implement Control Measures to Attain Performance Standards

requires the County to implement control measures and pollution prevention strategies to reduce road related sediment delivery from County roads to stream channels, based on the Prioritized List and Schedule of Actions completed in Provision C.16.b. The County is required to implement and complete at least twenty percent (20%) of the control measures identified in the Prioritized List and Schedule of Actions by 2027. The County is required to report on the status of completed control measures in the Annual Report each year starting the first year of project implementation.

Provision C.18.d. Monitoring requires the County to conduct implementation, effectiveness and forensic monitoring to assess the performance of implemented control measures. The County is required to provide a monitoring report as part of the Annual Report each year starting in the first year of project implementation. The monitoring and reporting requirements of Provision C.18 are authorized under CWA § 308, 40 C.F.R. §§ 122.26(d)(2), 122.41(h), (j) and (l), 122.42(c), 122.44(i) and 122.48, and CWC § 13383.

C.19. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements

Findings in Support of Provision C.19

- C.19-1** Contra Costa County watersheds are under two Regional Water Quality Control Boards' jurisdiction, the San Francisco Bay Water Board and the Central Valley Water Board. The cities of Antioch, Brentwood, and Oakley, and portions of Unincorporated Contra Costa County and the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD) (the East County Permittees) in Contra Costa County are in the Central Valley Water Board's jurisdiction.
- C.19-2** The East County Permittees are member agencies of the Contra Costa Clean Water Program (CCCWP). CCCWP assists its member agencies – most of whom are within the San Francisco Bay Water Board's jurisdictional boundaries – with tasks that can be done consistently throughout the County.
- C.19-3** In 1992, the San Francisco Bay Water Board issued the first NPDES permit with requirements for stormwater discharges from municipal separate storm sewer systems (MS4s) in Contra Costa County cities and towns, and the portions of the County and CCCFCWCD located in its jurisdiction. In 1993, the Central Valley Water Board used the permit issued by the San Francisco Bay Water Board as a model and issued an NPDES permit with waste discharge requirements for stormwater discharges from MS4s within the East County Permittees' jurisdictions. In subsequent permit reissuance cycles, each Regional Water Board adopted stormwater permits for Contra Costa County with similar provisions, exercising an inter-regional, collaborative approach for the East County Permittees.
- C.19-4** On October 14, 2009, the San Francisco Bay Water Board issued its first region-wide NPDES permit, Order No. R2-2009-0074, NPDES Permit No. CAS612008, for stormwater discharges from MS4s in Alameda, Contra Costa, San Mateo, and Santa Clara counties, the cities of Fairfield, Suisun, and Vallejo, and the Vallejo Sanitation and Flood Control District. The Central Valley Water Board used Order No. R2-2009-0074 as a model and adopted Order No. R5-2010-0102, reissuing NPDES Permit No. CAS083313 for the East County Permittees to discharge stormwater from MS4s in their jurisdictions on September 23, 2010. Where Order No. R2-2009-0074 provisions were sufficient to meet the requirements of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Central Valley Basin Plan) and other Central Valley Water Board policies, the provisions in Order No. R5-2010-0102 were the same as those in Order No. R2-2009-0074. Where different or additional provisions were required to meet

the requirements of the Central Valley Basin Plan or other Central Valley Water Board policies, including the Sacramento-San Joaquin Delta Estuary Methylmercury Total Maximum Daily Load (TMDL), those different or additional provisions were included in Order No. R2-2009-0074.

- C.19-5** On November 19, 2015, the San Francisco Bay Water Board adopted Order No. R2-2015- 0049, updating and reissuing waste discharge requirements for stormwater discharges from MS4s in Alameda, Contra Costa, San Mateo, and Santa Clara counties, the cities of Fairfield, Suisun, and Vallejo, and the Vallejo Sanitation and Flood Control District.
- C.19-6** The East County Permittees submitted to the Central Valley Water Board a report of waste discharge, dated March 4, 2015, for reissuance of their waste discharge requirements under NPDES permit to discharge stormwater runoff from storm drains and watercourses within their jurisdictions. The East County Permittees anticipated that the Central Valley Water Board would reissue their stormwater permit with requirements consistent with the San Francisco Bay Water Board 's Order No. R2-2015-0049. However, the Central Valley Water Board was already preparing a region-wide General Waste Discharge Requirements and NPDES Permit for stormwater discharges from MS4s (General Permit) within the Central Valley region.
- C.19-7** The Central Valley Water Board did not support adopting separate waste discharge requirements for stormwater discharges from the East County Permittees, which would be consistent with the San Francisco Bay Water Board's Order No. R2-2015-0049. The General Permit is significantly different from Order No. R2-2015-0049 and thus would not allow the East County Permittees to continue the collaborative approach through CCCWP. The Central Valley Water Board offered the East County Permittees two options: request a transfer of jurisdiction for stormwater permitting to the San Francisco Bay Water Board or obtain coverage under the General Permit.
- C.19-8** In the fall of 2016, the East County Permittees asked the Central Valley Water Board to designate the San Francisco Bay Water Board as the permitting entity for stormwater discharges from their MS4s.
- C.19-9** In a letter dated January 6, 2017, the San Francisco Bay Water Board and the Central Valley Water Board designated the San Francisco Bay Water Board to regulate MS4 discharges from the East County Permittees. The designation set forth the following conditions:
- (1) The designation is only for MS4 permitting
 - (2) Each Regional Water Board reserves the right to take enforcement actions authorized by law against an East County Permittee for violations of an MS4 permit provision that affects that Regional Water Board's watershed

- (3) The San Francisco Bay Water Board will consult and coordinate with the Central Valley Water Board in the development of MS4 permit provisions to ensure they adequately reflect and implement the Central Valley Water Board's Basin Plan and policies; and
- (4) The Central Valley Water Board will approve any plans and/or studies required for compliance with the Central Valley Water Board's Basin Plan and policies.

C.19-10 Order No. R2-2019-0004 amended Order No. R2-2015-0049 to add the East County Permittees. It also allowed them extended timelines to come into compliance with specific Order No. R2-2015-0049 provisions and identified and exempted those Order No. R2-2015-0049 provisions that do not apply to the East County Permittees, and incorporated requirements for the Sacramento-San Joaquin Delta Estuary Methylmercury TMDL and the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL.

Specific C.19 requirements

Provision C.19.a (Mercury Controls) exempts the East County Permittees from Provision C.11, Mercury Controls, because the East County Permittees are not subject to the San Francisco Bay Mercury TMDL. Therefore, they do not have San Francisco Bay Mercury TMDL wasteload allocations (WLAs) for mercury (See Provision 19.d concerning compliance with the Delta Methylmercury TMDL).

Provision C.19.b (Polychlorinated Biphenyls (PCBs) Controls) exempts the East County Permittees from Provision C.12, PCBs Controls, because the East County Permittees are not subject to the San Francisco Bay PCBs TMDL. Therefore, they do not have San Francisco Bay PCBs TMDL WLAs.

Provision C.19.c (Diazinon and Chlorpyrifos Controls) implements the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL. The Central Valley Water Board adopted a basin plan amendment including a TMDL for diazinon and chlorpyrifos in the Sacramento-San Joaquin Delta Waterways (Delta Waterways)³³⁴ on June 23, 2006. The State Water Board and U.S. EPA both approved the basin plan amendment. The TMDL includes WLAs for diazinon and chlorpyrifos applicable to the East County Permittees.

- (1) The TMDL states that levels of diazinon and chlorpyrifos shall not exceed the sum (S) of one (1) as defined below:

³³⁴ The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin Appendix 42 lists the Delta Waterways to which the site-specific diazinon and chlorpyrifos water quality objectives and implementation and monitoring provisions apply.

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in ug/L of point source discharge

C_C = chlorpyrifos concentration in ug/L of point source discharge

WQO_D = acute or chronic diazinon water quality criterion (0.160 and 0.100 ug/L, respectively)

WQO_C = acute or chronic chlorpyrifos water quality criterion (0.025 and 0.015 ug/L, respectively)

For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero.

The East County Permittees' previous permit included requirements for the Diazinon and Chlorpyrifos TMDL. The final compliance deadline for the TMDL was December 1, 2011.

The East County Permittees submitted a letter dated September 13, 2018, demonstrating their discharge has not exceeded the TMDL WLAs or water quality objective concentrations for diazinon and chlorpyrifos since 2008. The letter summarizes the results of diazinon and chlorpyrifos monitoring from 2012 - 2014 under the CCCWP's Pollutants of Concern Load Monitoring at Lower Marsh Creek. This sampling location is directly downstream from one of the largest continuous urbanized areas in East County and samples characterized critical storm runoff events.

In addition, the letter includes diazinon and chlorpyrifos summary monitoring data from other County locations, in areas with both urban and agricultural lands from 2001-2017 by three programs: the State of California's Surface Water Ambient Monitoring Program (SWAMP), the Department of Pesticide Regulation (DPR) Statewide Pesticide Monitoring Program, and the San Francisco Estuary Institute (SFEI) Small Tributaries Loading Strategy. The SWAMP monitoring data includes 16 chlorpyrifos samples with no detections or exceedances, and 16 diazinon samples with 9 detections and 9 exceedances from 2001 - 2005. The DPR monitoring data includes 13 chlorpyrifos samples with 1 detection and 1 exceedance, and 13 diazinon samples with 1 detection and 1 exceedance from 2008 - 2009 and 2017. The chlorpyrifos and diazinon exceedances occurred in 2009 and could have been from agricultural sources. The SFEI monitoring data includes 5 chlorpyrifos samples with no detections or exceedances, and 5 diazinon samples with no detections or exceedances from 2013 -

2014. The monitoring data from SWAMP, DPR, and SFEI show that water quality objectives for diazinon and chlorpyrifos have not been exceeded since 2009, providing additional data to reflect the trend of reduced diazinon and chlorpyrifos concentrations in urban runoff.

The decline in concentrations of diazinon and chlorpyrifos in the waters to which the East County Permittees discharge is consistent with observations of declines in urban runoff concentrations in the Central Valley Watershed following cancellation of urban uses of these chemicals. U.S. EPA cancelled the sale of nearly all non-agricultural diazinon and chlorpyrifos products by 2004. However, residents could still be storing diazinon and chlorpyrifos products, and old supplies remain legal to use. Because use of these products is still allowed and out of the direct control of the East County Permittees, there still is potential that such use could make consistent attainment of numeric effluent limits infeasible. The implementation of Provision C.9 by the East County permittees is consistent with the requirements of the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL. Provision C.9 requirements are in the implementation plan for the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL. The existing monitoring for toxicity and pesticides in Provision C.8. will be sufficient to demonstrate continued compliance with the diazinon and chlorpyrifos TMDL.

Provision C.19.d (Methylmercury Control Measure Plan and Monitoring) requires the East County Permittees to submit a methylmercury control plan and conduct a corresponding reasonable assurance analysis. The East County Permittees proposed completing these documents as part of their Delta Mercury Control Study Final Report that was submitted to meet Phase 1 of the Central Valley Water Board's Water Quality Control Plan for the Sacramento River and San Joaquin River Basin's Sacramento-San Joaquin River Delta Mercury Control Program and associated Methylmercury TMDL (see Fact Sheet for Provision C.19.e, below). Provision C.19.d requires methylmercury monitoring intended to assess inputs of methylmercury to the Delta from Marsh Creek and urban runoff; provide information to support implementation of pollutant control strategies; and assess progress toward achieving WLAs for the TMDL; and help resolve uncertainties in loading estimates and impairments associated with methylmercury. In particular, methylmercury monitoring addresses the management questions proposed by the CCCWP and set forth in Provision C.19.d.ii.(1)(f)

CWA section 402 (a)(2); 40 CFR sections 122.42(c)(4), 122.44(i), and 122.48(b); and CWC section 13383 provide authority for the Water Board to require monitoring and technical water quality reports. Provision C.19.d. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements and (2) provide information useful in evaluating compliance with all Permit requirements.

Provision C.19.e (Delta Mercury Control Program) implements the Delta Methylmercury TMDL in the Water Quality Control Plan for the Sacramento River and

San Joaquin River Basins to address the mercury impairments (See Resolution No. R5-2010-0043.). The Delta Methylmercury TMDL was approved by the State Water Resources Control Board and the California Office of Administrative Law. Final approval by the U.S. EPA occurred on October 20, 2011.

The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the CWA 303(d) list for mercury and the State Water Resources Control Board has designated the Delta as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program. Mercury problems are evident throughout the Central Valley watershed. The main concern with inorganic mercury is that it can develop into methylmercury, a powerful neurotoxin that bioaccumulates in the aquatic food chain to harmful levels. Health advisories have been issued which recommend limiting consumption of fish from the Bay/Delta, tributaries to the Delta, and many lakes and reservoirs in the Central Valley. Concentrations of mercury in fish in other water bodies approach or exceed National Academy of Science (NAS), U.S. EPA, and/or U.S. Food and Drug Administration (FDA) guidelines for wildlife and human protection. Mercury levels also exceed water quality objectives for the Delta and elsewhere. In addition to these concerns, fish-eating birds taken from some bodies of water in the basins have levels of mercury that can be expected to cause toxic effects. Bird-kills from mercury also have been documented in Lake Berryessa.

Components of the Delta Methylmercury TMDL relevant to municipal stormwater that are implemented through Provisions C.19.d and C.19.e are as follows:

- (1) The methylmercury wasteload allocations for the East County Permittees, by Delta subarea, are:
 - (a) Central Delta 0.75 grams/year;
 - (b) Marsh Creek 0.30 grams/year; and
 - (c) West Delta 3.2 grams/year
- (2) Compliance with the methylmercury waste load allocations are required to be met as soon as possible, but no later than January 1, 2030, unless the Central Valley Regional Water Board modifies the TMDL implementation schedule and final compliance date. The wasteload allocations for the Central and West Delta subareas are associated with a 0% reduction requirement while the wasteload allocation for the Marsh Creek subarea is associated with a 73% reduction requirement.
- (3) The NPDES permits for urban runoff management agencies shall require pollution prevention measures and the implementation of BMPs to minimize total mercury discharges, as well BMPs to control erosion and sediment discharges with the goal of reducing mercury discharges. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to human health and wildlife. Requirements in the permit issued or reissued

and applicable for the term of the permit shall be based on an updated assessment of pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges.

- (4) Annual methylmercury loads in urban runoff in MS4 service area within the Delta and Yolo Bypass may be calculated by the following method or by an alternate method approved the Central Valley Water Board Executive Officer. The annual methylmercury load in urban runoff for a given MS4 service area during a given year may be calculated by the sum of wet weather and dry weather methylmercury loads. To estimate wet weather methylmercury loads discharged by MS4 urban areas, the average of wet weather methylmercury concentrations observed at the MS4's compliance locations maybe multiplied by the wet weather runoff volume estimated for all urban areas within the MS4 service area within the Delta and Yolo Bypass. To estimate dry weather methylmercury loads, the average dry weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the estimated dry weather urban runoff volume in the MS4 service area within the Delta and Yolo Bypass. This method is consistent with that used to develop load estimates in the Delta Methylmercury TMDL.
- (5) Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury or methylmercury loads to the Delta or is outside the jurisdiction authority of any agency, the Central Valley Water Board may consider issuing additional allocations and regulatory requirements for the source in question.

Since a methylmercury reduction was not required for the West or Central subareas, the Delta Mercury Control Study Final Report did not identify any new mercury control measures beyond implementing green infrastructure in new and retrofitted urban developments and continuing to implement the control measures consistent with the Delta Methylmercury TMDL. The Delta Mercury Control Study Final Report states that additional information is required to determine if elevated methylmercury in Marsh Creek can be controlled as part of the actions to also prevent eutrophication conditions. This study will be completed as part of the methylmercury control plan and corresponding reasonable assurance analysis.

Provision C.19.e requires the East County Permittees to implement the following pollution prevention measures, BMPs, and risk reduction measures.

Mercury Collection and Recycling – Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs, thermometers) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and this Provision requires continued implementation of collection and recycling of

mercury containing devices and waste products and alternative procedures to improve proper handling, disposal, and recycling of mercury-containing products.

Enhanced Municipal Management Practices to Reduce Sediment Discharges – Unless appropriate BMPs are implemented, municipal operations and maintenance activities are potential sources of sediment discharges. Sediment accumulated on sidewalks, corporation yards, roads, parking lots, and landscaping, is a major source of point source pollutants found in urban runoff. The enhanced municipal management practices to reduce sediment discharges are intended to minimize total (inorganic) mercury discharges required by the Delta Methylmercury TMDL. Thus, Provision C.19.e requires the East County permittees to implement minimum BMPs for municipal facilities and activities as part of their ongoing pollution prevention efforts. Such prevention measures include, but are not limited to, storm drain drop inlet and pipeline cleaning, landscaping, road construction, road repair, and pump station cleaning. The work of municipal maintenance personnel vital to minimize stormwater pollution because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting, and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain.

Public Education and Risk Reduction – An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues and its importance and influences positive stormwater pollution prevention behavior.

The East County Permittees have been implementing public outreach campaigns to educate their community on mercury pollution prevention. This Permit requires the East County Permittees to continue implementing a public education, outreach and participation program that is designed to reach residential, commercial, and industrial sources of mercury-containing products or emissions. The East County Permittees can utilize various electronic and print media and paid and free media to best reach the different various target audiences. Additionally, the East County Permittees need to continue communicating with a broad spectrum of citizens with stormwater pollution prevention information through long-established outreach mechanisms such as staffing tables or booths at fairs, street fairs, and other community events. An informed community ensures greater compliance with the stormwater program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of local waters.

Methylmercury is a toxicant that is harmful to the brain and nervous system of infants, children, and the developing fetus. Nearly all fish caught in the Delta contain traces of methylmercury, the methylated form of mercury. However, larger fish that have lived longer have the highest levels of methylmercury because they have had more time to

accumulate it. These large fish pose the greatest risk to children and pregnant women who eat them regularly. This Provision requires continual actions to manage human health risk due to mercury in Delta fish. This includes effort to communicate the health risks of eating Delta fish to high risk-communities.

Methylmercury Controls - In a previous permit (Order No. R5-2010-0102), the East County Permittees were required to implement Phase 1 of the Delta Methylmercury TMDL. Phase 1 required them to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs to control methylmercury and to develop and evaluate additional BMPs effectiveness to control methylmercury. In October 2018, the East County Permittees submitted the Delta Methylmercury Control Study Final Report to the Central Valley Water Board documenting the results of their control studies. As was shown in bioretention cell LAU3, construction of bioretention cells with an underdrain in areas allowing tidal inundation of the media may lead to an increase in mercury methylation. Therefore, this Provision requires the Permittees to implement control measures that reduce mercury methylation potential and retrofit existing BMPs that show an increased potential for mercury methylation. This Provision is also intended to require the Permittees to implement any other methylmercury controls identified in the methylmercury control plan and corresponding reasonable assurance analysis.

The Central Valley Regional Water Board will use the results of the control studies to conduct a Phase 1 Delta Methylmercury TMDL Review that considers:

- Modification of methylmercury goals, objectives, allocations and/or the final compliance date;
- Implementation of management practices and schedules for methylmercury controls; and
- Adoption of a mercury offset program for dischargers who cannot meet their load and waste load allocations after implementing all reasonable load reduction strategies.

The findings of the control studies and other information will also be used to re-evaluate the fish tissue objectives, the linkage analysis between objectives and sources, and the attainability of the allocations. The linkage analysis, fish tissue objectives, allocations, and time schedules may also be adjusted. In addition, the Central Valley Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Methylmercury TMDL during the Phase 1 Delta Methylmercury TMDL Review.

Phase 2 of the Delta Methylmercury TMDL begins after the Phase 1 Delta Methylmercury TMDL Review. If Phase 2 begins during this Permit term, this Permit may be amended to include additional requirements.

C.19.f (Pyrethroid Control Program) implements the Central Valley Water Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins' conditional prohibition of the discharges of pyrethroid pesticides as well as monitoring and reporting requirements (adopted through Resolution No. R5-2017-0057). On August 31, 2020, the East Contra Costa Permittees submitted for approval as a pyrethroid management plan the actions required under Provision C.9. On December 30, 2020, the Central Valley Water Quality Board sent a letter to the East County Permittees stating that the elements of the Pesticide Control Program in Provision C.9 were consistent with the Pyrethroid Basin Plan Amendment requirements for a pyrethroid management plan and included all the management practices required to be considered for inclusion in a pyrethroid management plan. Additionally, this provision implements the requirement to submit a baseline monitoring report to the Central Valley Water Board as required in the Pyrethroid Basin Plan Amendment of municipal dischargers discharging to non-pyrethroid TMDL waters.

C.20. Cost Reporting

Legal Authority

The following legal authority applies to Provision C.20:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(1)(vi) requires “[for] each fiscal year to be covered by the permit, a description of the financial resources currently available to the municipality to complete part 2 of the permit application. A description of the municipality’s budget for existing storm water programs, including an overview of the municipality’s financial resources and budget, including overall indebtedness and assets, and sources of funds for storm water programs.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(vi) requires “[for] each fiscal year to be covered by the permit, a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs under paragraphs (d)(2) (iii) and (iv) of this section. Such analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.”

Fact Sheet Findings in Support of Provision C.20

- C.20-1** Fiscal analysis and cost reporting provide a useful tool to evaluate program implementation and effectiveness. U.S. EPA has found that “examining the levels of proposed spending and funding allows the permitting authority to gauge the ability of the applicant to implement the program and predict its effectiveness. The fiscal analysis also will help determine whether the applicant has met the statutory requirement of reducing the discharge of pollutants to the MS4 to the maximum extent practicable. Finally, the estimates help the applicant evaluate the feasibility and cost-effectiveness of its program.”³³⁵
- C.20-2** Standardization and comparison of cost reporting is supported by the State Water Board-funded NPDES Stormwater Cost Survey, which finds that “standards for reporting costs and stormwater activities are needed to allow accurate cost comparisons to be made between stormwater activities.”³³⁶

³³⁵ “Guidance Manual for the Preparation of Part II of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems,” U.S. EPA 833-B-92-002, November 1992.

³³⁶ “NPDES Storm Water Cost Survey Final Report. Office of Water Programs,” California State University, Currier, Brian K., et al. 2005.

- C.20-3** The State Water Board’s Office of Research, Planning, and Performance (ORPP) has also developed guidance³³⁷ for Water Board staff on obtaining MS4 Permit implementation costs from permittees. This guidance describes the benefits from greater detail and more standardization in cost reporting because stormwater issues vary from system to system, often making it difficult to compare compliance costs for individual MS4 permits. Collecting standardized data on what permittees spend to comply with their MS4 permits will allow the Water Boards and stakeholders to broadly compare across regions and systems and to identify trends over time.
- C.20-4** The City of Salinas MS4 Permit provides another example of standardized cost reporting data being used to evaluate the effectiveness of program implementation.³³⁸ It finds that “consistent and reliable cost information is critical for the Permittee to manage its assets, programs, funding strategies, and potential future credit programs and stormwater utility fees.”
- C.20-5** The cost reporting categories were developed considering the ORPP guidance, as well as the cost reporting requirements of the City of Salinas MS4 Permit and the Regional MS4 Permit for Los Angeles and Ventura Counties.³³⁹
- C.20-6** To provide additional flexibility to Permittees in developing a reporting methodology that considers the unique aspects of each program, while also allowing for broad comparisons between program components and costs, the Permit allows Permittees to engage in a collaborative approach to developing a consistent framework.

³³⁷ “Guidance for Staff on Obtaining MS4 Permit Implementation Costs from Permittees and Factors Permittees Could Consider When Reporting to the Water Boards,” State Water Board Office of Research, Planning, and Performance (ORPP), April 16, 2019.

³³⁸ Central Coast Regional Water Board, NPDES Permit and WDR for the City of Salinas Municipal Stormwater Discharges, NPDES Permit No. CA0049981, Order No. R3-2019-0073, adoption date: September 20, 2019, effective date: October 1, 2019.

³³⁹ Los Angeles Regional Water Board, NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles and Ventura County, NPDES Permit No. CAS004004, Order No. R4-2021-0105, NPDES Permit No. CAS004004.

C.21. Asset Management

Legal Authority

The following legal authority applies to Provision C.21:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR section 122.26(d).

Specific Legal Authority: Federal NPDES regulation 40 CFR section 122.41(e) requires a permittee to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with its permit.

Federal NPDES regulation 40 CFR section 122.26(d)(1)(v) requires permittees to supply information on implementation and operation and maintenance measures for structural controls.

Federal NPDES regulation 40 CFR section 122.26(d)(1)(iii)(B)(5) requires permittees to provide, “the location of major structural controls for stormwater discharge (retention basins, detention basins, major infiltration devices, etc.).”

Federal NPDES regulation 40 CFR section 122.26(d)(2)(iv) requires permittees to provide, “a description of structural control measures to reduce pollutants in runoff from commercial and residential areas.” It also requires permittees to “describe priorities for implementing controls.”

Federal NPDES regulation 40 CFR section 122.26(d)(1)(vi) requires permittees to provide, “A description of the municipality’s budget for existing storm water programs, including an overview of the municipality’s financial resources and budget, including overall indebtedness and assets, and sources of funds for storm water programs.”

Federal NPDES regulation 40 CFR section 122.26(d)(2)(vi) requires an annual fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs under 40 CFR sections 122.26(d)(2)(iii) and (iv).

Fact Sheet Findings in Support of Provision C.21

C.21-1 This Order requires each Permittee to develop and implement an Asset Management Plan to ensure the satisfactory condition of all hard assets constructed during this and previous permit terms, by continuing to improve its understanding of its stormwater infrastructure condition and performance, by accounting for additional stressors on those assets, such as those related to climate change, and by identifying cost factors to support more accurate forecasting and budget development.

- C.21-2** Asset management has been defined as an integrated optimization process of “managing infrastructure assets to minimize the total cost of owning and operating them, while continuously delivering the service levels customers desire, at an acceptable level of risk.”³⁴⁰
- C.21-3** Asset management is important to ensure proper operation and maintenance of all facilities and controls used to comply with an NPDES permit. U.S. EPA has also recognized the importance of incorporating asset management provisions into permits to ensure permittees implement sound system operation and maintenance practices, properly plan for needed system replacements and upgrades, and meet water quality protection requirements.³⁴¹
- C.21-4** An MS4 permittee must establish appropriate quality assurance procedures to ensure that its discharge meets MEP and water-quality based requirements. Asset management plans provide a framework for setting and operating these quality assurance procedures and ensure that the MS4 permittee has sufficient financial and technical resources to continually maintain a minimum performance level of its hard assets, in compliance with 40 CFR § 122.41(e).
- C.21-5** 40 CFR sections 122.26(d)(1)(iii)(B)(5) and 122.26(d)(2)(iv) support the inclusion of structural controls in the asset inventory.
- C.21-6** The fiscal requirements at 40 CFR sections 122.26(d)(1)(vi) and 122.26(d)(2)(vi) are integral components of the Asset Management Plan required by this Order. They support the requirement to evaluate or forecast costs necessary for the implementation of the Operation, Maintenance, Rehabilitation, and Replacement plan, as well as the overall concept of the asset management program to identify assets and describe the financial plan to manage those assets.
- C.21-7** U.S. EPA Support for Asset Management and Available Guidance and Examples: U.S. EPA has emphasized the development of asset management programs in recent years as a useful tool for ensuring consistent performance of water infrastructure systems while minimizing the costs associated with the operation of these systems. U.S. EPA has required stormwater utilities to develop and implement asset management plans to provide the tracking and planning framework needed to meet these requirements in their permitting.³⁴² The growing concern for aging infrastructure among entities responsible for

³⁴⁰ Association of Metropolitan Sewerage Agencies (AMSA), et al. 2002.

³⁴¹ “Asset Management: Incorporating Asset Management Planning Provisions into NPDES Permits,” December 2014, U.S. EPA, Region 9.

³⁴² U.S. EPA issued NPDES Permit No. GUS040001, authorizing the Guam Department of Public Works to discharge under the National Pollutant Discharge Elimination System, issuance date: December 20, 2018. Provisions requiring an Asset Management Plan are found on page 38 of the Guam Permit.

operating, maintaining, and improving stormwater, wastewater, and drinking water systems has led to development and implementation of formal asset management programs to reduce unexpected and expensive repairs and increase overall system performance. The CWA specifies that NPDES permits must include requirements for discharging facilities to develop and implement operation and maintenance procedures and financial plans sufficient to ensure their future operational integrity and help them comply with permit discharge conditions. U.S. EPA has encouraged stormwater utilities to develop and implement asset management planning tools to provide the tracking and planning framework needed to meet these requirements. U.S. EPA has also encouraged water utilities to use modern analytical planning tools to support deployment of greener, more sustainable, better integrated water infrastructure improvements to help implement NPDES permit requirements. U.S. EPA anticipates formal asset management requirements in NPDES permits increasing in the future, as the benefits of asset management plans are realized.³⁴³

- C.21-8** The City of San Diego (San Diego) provides an example of asset management planning for stormwater. San Diego developed an integrated Watershed Asset Management Plan for its stormwater management system in order to anticipate and justify current and projected costs of complying with federal, state, and local stormwater regulations.³⁴⁴ San Diego took approximately five years to complete its Watershed Asset Management Plan. San Diego's Watershed Asset Management Plan identifies and prioritizes potential water quality and flood risk management. San Diego is currently developing the database capabilities to support its plan.
- C.21-9** U.S. EPA's Water Finance Clearinghouse and the California State University Sacramento Office of Water Program's Environmental Finance Center (Region 9 U.S. EPA Environmental Finance Center) are conducting work to support stormwater asset management. For example, the U.S. EPA Region 9 Environmental Finance Center has developed draft stormwater finance and asset management guidance and toolkits, including resources for estimating stormwater costs, and is supporting a few California municipal stormwater programs to test out and refine the toolkit with the intent of using the asset management results to support the development of stormwater utilities to fund stormwater programs. Additionally, Region 9 U.S. EPA Environmental Finance Center is disseminating information through asset management forums, developing an asset management mobile assistance app, has supported the State Water Board's Strategy to Optimize Resource Management of Storm

³⁴³ "Asset Management Programs for Stormwater and Wastewater Systems: Overcoming Barriers to Development and Implementation," March 6, 2017, p. ii. Prepared for U.S. EPA by PG Environmental.

³⁴⁴ "Case Study: City of San Diego Watershed Asset Management Planning," p. 1, U.S. EPA, Region 9.

Water (STORMS) Stormwater Funding Report,³⁴⁵ and is supporting other asset management-related tools and resources.³⁴⁶

- C.21-10** The Order's asset management requirements are consistent with: U.S. EPA's asset management plan requirements in Guam's municipal stormwater Permit;³⁴⁷ U.S. EPA, Region 9's 2014 guidance for incorporating asset management planning requirements into NPDES permits, which includes suggestions for an inventory of MS4 assets, an identification of the required performance, a plan for maintenance, rehabilitation and replacement of assets, cost projections, and an assessment of climate change impacts;³⁴⁸ San Diego's Watershed Asset Management Plan;³⁴⁹ and the California Regional Water Quality Control Board, Central Coast Region's asset management plan requirements in the City of Salinas' municipal stormwater permit.³⁵⁰
- C.21-11** Many of the provisions in the Previous Permit (Order No. R2-2015-0049, as amended) required the Permittees to develop and maintain effective information management systems to track hard assets. It required, and this Order continues to require, Permittees to implement various measures which support the development and implementation of the Asset Management Plan. For example, in both this Order and the Previous Permit, Provision C.3.b requires Permittees to track and report on hard assets built pursuant to the requirements for Regulated Projects and Provision C.3.h requires Permittees to implement an Operation and Maintenance Verification Program, which compels, for example, inspections by Permittees or their agents. In both the current and Previous Permit, Provision C.10.b requires Permittees to maintain Full Trash Capture Systems within their jurisdictions, maintain records of those systems, and certify annually that those systems are operated and maintained to meet the requirements for Full Trash Capture Systems, and Provision C.10.f requires Permittees to retain and update trash generation maps depicting the location and tributary drainage area of all Full Trash Capture Systems within

³⁴⁵ "Strategy to Optimize Resource Management of Storm Water (STORMS): Project 4b: Eliminate Barriers to Funding Stormwater Programs and Identify Funding for Stormwater Capture and Use Projects," May 31, 2018.

³⁴⁶ "Asset Management Storm Water Roundtable Presentation," by Bola Odusoga, U.S. EPA Region 9, March 28, 2019, slide 28.

³⁴⁷ U.S. EPA issued NPDES Permit No. GUS040001, authorizing the Guam Department of Public Works to discharge under the National Pollutant Discharge Elimination System, issuance date: December 20, 2018.

³⁴⁸ "Asset Management: Incorporating Asset Management Planning Provisions into NPDES Permits," December 2014, U.S. EPA, Region 9.

³⁴⁹ "Transportation and Storm Water Department Storm Water Division: Watershed Asset Management Plan," July 19, 2013, Prepared for City of San Diego by URS Corporation.

³⁵⁰ Central Coast Regional Water Quality Control Board, NPDES Permit and WDR for the City of Salinas Municipal Stormwater Discharges, NPDES Permit No. CA0049981, Order No. R3-2019-0073, adoption date: September 20, 2019, effective date: October 1, 2019.

their jurisdictions which they are receiving credit for towards their Trash Reduction Requirements.

C.21-12 This Order includes requirements in other provisions that support components of the Asset Management Plan. For example, Provision C.5.f requires Permittees to identify information missing from their current MS4 maps and develop a plan and schedule to compile additional storm sewer system information, including component locations, size or specifications, materials of construction, and condition, which will be used to update Permittee maps and databases. The Permittees' implementation of Provision C.5.f will support the Permittees' implementation of Provision C.21 because it will help them understand where and how their hard assets are connected to their MS4s.

C.21-13 Provision C.20 requires Permittees to undertake a fiscal analysis of the capital and operation and maintenance costs incurred to comply with this Order's requirements listed in Provision C.20.b.(iv), which includes the capital, operation, and maintenance costs of hard assets. Therefore, some of the information generated by the Permittees' implementation of Provision C.20 is likely to directly inform the Permittees' implementation of and reporting on Provision C.21. This is further discussed below under the Specific Provision C.21 Requirements for Provision C.21.b, Implementation level.

Specific Provision C.21 Requirements

Provision C.21. Asset Management requires Permittees to develop, implement, and report on asset management programs. Each component of the asset management provision is necessary to address the objectives, information needs, and questions listed in findings C.21-1 through C.21-12, above.

Provision C.21.a. Task Description. Provision C.21.a requires Permittees to develop and implement an Asset Management Plan in order to ensure the satisfactory condition of all hard assets constructed during this and previous permit terms pursuant to Provisions C.2. Municipal Operations, C.3. New Development and Redevelopment, C.10. Trash Load Reduction, C.11. Mercury Controls, C.12. PCBs Controls, C.13. Copper Controls, C.14. Bacteria Control for Impaired Water Bodies, C.17. Discharges Associated with Unsheltered Homeless Populations, C.18. San Mateo County Sediment Controls, and C.19. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements. These Provisions contain requirements to implement, track, operate and maintain hard assets (structural controls). The inclusion of the development and implementation of the Asset Management Plans in this Order is necessary to comply with the federal regulations cited above.

Provision C.21.b. Implementation Level. Provision C.21.b describes the Asset Management Plans, which Permittees must develop by June 30, 2025.³⁵¹

An integral component of the Asset Management Plan is the development of an Operation, Maintenance, Rehabilitation, and Replacement Plan (Asset Management O&M Plan), which is prescribed in Provision C.21.b.i.(3), to effectuate sound asset management. The evaluation or forecasting of costs necessary for the implementation of the Asset Management O&M Plan is likewise necessary for this purpose. Such evaluation may supplement Permittees' compliance with Provision C.20. Cost Reporting, because Provision C.20 includes requirements for Permittees to report on the costs associated with their hard assets; however, it does not include the level of detail specified in Provision C.21.b.(i)(3)(c). Therefore, although the implementation of Provision C.21 may inform the cost reporting required in Provision C.20, the information that will be generated by the two Provisions is distinct.

Provision C.21.b further requires the Permittees to begin implementation of the Asset Management Plans no later than July 1, 2025,³⁵² to reassess and update the Asset Management Plans on an as-needed basis to address changing conditions and resources, to provide the latest version of the Asset Management Plans to Water Board staff during inspections and audits or otherwise upon request, and to complete a Climate Change Adaptation Report to identify potential climate change-related threats to assets and appropriate adaptation strategies. In subsequent permits, Permittees will likely be expected to reassess and update their Asset Management Plans at least once per permit term, likely by no later than the end of the fourth year of the Permit terms.

The purpose of the Climate Change Adaptation Report is to ensure that in the long term, as climate change impacts increase, Permittees are able to make any necessary adjustments to the design, operation, and maintenance of their hard assets to ensure their satisfactory condition and performance, in response to impacts to those assets associated with climate change. U.S. EPA, Region 9's 2014 guidance for incorporating asset management planning requirements into NPDES permits includes a requirement for the assessment of climate change impacts.³⁴⁸

Provision C.21.c. Reporting. Provision C.21.c requires Permittees to submit their individual Asset Management Plans with their 2025 Annual Reports, to report individually on the implementation of their Asset Management Plans starting with the 2026 Annual Reports,³⁵³ as detailed in Provision C.21.c.ii, and to submit their Climate Change Adaptation Report(s) with the 2027 Annual Reports (on an all-Permittee scale or countywide scale). This schedule provides Permittees three years from the start of the Permit term to develop and ultimately submit the Asset Management Plans, an

³⁵¹ This date is the last day of the third fiscal year of the permit term.

³⁵² This date is the first day of the fourth fiscal year of the Permit term.

³⁵³ By this reporting date, the Permittees will have had a full year of implementation of their Asset Management Plans, pursuant to Provision C.21.b.ii.

additional year after that submittal before they must implement the Asset Management Plans, and five years from the start of the Permit term to complete their Climate Change Adaptation Report(s). This timing is sufficient and necessary for the Permittees to develop robust Asset Management Plans, and will allow the Water Board and stakeholders enough time prior to the Permit's subsequent reissuance to consider necessary changes to Provision C.21.

VII. Attachment G: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment G:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in federal NPDES regulation 40 CFR 122.41.

Attachment G includes Standard Provisions. These Standard Provisions ensure that NPDES stormwater permits are consistent and compatible with U.S. EPA's federal regulations. Some Standard Provision sections specific to publicly owned sewage treatment works are not included in Attachment G.

ATTACHMENT B

Provision C.3.b. Sample Reporting Table

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
Private Projects													
Nirvana Estates; Project #05-122; Property bounded by Paradise Lane, Serenity Drive, and Eternity Circle; Eden, CA	Heavenly Homes; Phase 1; Construction of 156 single-family homes and 45 townhomes with commercial shops and underground parking.	Runoff from site drains to Babbling Brook	25 acres site area, 21 acres disturbed	20 acres new	20 acres post-project	Application submitted 12/29/14, Application deemed complete 1/30/15, Project approved 7/16/15	Stenciled inlets, street sweeping, covered parking, car wash pad drains to sanitary sewer	Pervious pavement for all driveways, sidewalks, and commercial plaza	vegetated swales, detention basins,	Conditions of Approval require Homeowners Association to perform regular maintenance. Written record will be made available to City inspectors.	WEF Method	n/a	Contra Costa sizing charts used to design detention basin at Peace Park. Also contributed to in-stream projects in Babbling Brook
Barter Heaven; Project #05-345; Shoppers Lane & Bargain Avenue; 14578 Shoppers Lane, Eden, CA	Deals Galore Development Co.; Demolition of strip mall and parking lot and construction of 500-unit 5-story shopping mall with underground parking and limited outdoor parking.	Runoff from site drains to Bargain River	5 acres site area, 3 acres disturbed	1 acre new, 2 acres replaced	3.5 acres pre-project, 4.5 acres post-project	Application submitted 7/9/15, Application deemed complete 8/2/15, Project approved 12/12/15	Stenciled inlets, trash enclosures, underground parking, street sweeping	One-way aisles to minimize outdoor parking footprint; roof drains to planter boxes	tree wells with bioretention; planter boxes with bioretention	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	\$ 250,000 paid to Renew Regional Project sponsored by Riverworks Foundation, 243 Water Way, Eden, CA 408-345-6789	Renew Project includes treatment and HM Controls

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
New Beginnings; Project No. #05-456; Hope Street & Chance Road; 567 Hope Boulevard, Eden, CA	Fresh Start Corporation; Demolition of abandoned warehouse and construction of a 5-story building with 250 low-income rental housing units.	Runoff from site drains to Poor Man Creek	5 acres site area, 100,000 ft ² disturbed	1 acre replaced	2 acres pre-project, 1 acre post-project	Application submitted 2/9/16, Application deemed complete 4/10/16; Project approved 6/30/16; estimated completion date 9/30/17	Trash enclosures, underground parking, street sweeping, car wash pad drains to sanitary sewer	roof drains to landscaping	parking runoff flows to six bioretention units/gardens	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	n/a	n/a
Public Projects													
Gridlock Relief, Project No. #05-99, ABC Blvd between Main and Huett Streets, Eden, CA	City of Eden. Widening of ABC Blvd from 4 to 6 lanes	Runoff from site drains to Congestion River	6 acres site area, 3 acres disturbed	2 acres new, 1 acre replaced	4 acres pre-project, 6 acres post-project	Application submitted 7/9/15, Application deemed complete 10/6/15, Project approved 12/9/15, Construction scheduled to begin 2/10/16 and estimated to	none	ABC Blvd sloped to drain runoff into landscaped areas in median	Runoff leaving underdrain system of landscaped median is pumped to bioretention gardens along either side of ABC Blvd	Signed statement from City of Eden assuming post-construction responsibility for treatment BMP maintenance.	WEF Method	n/a	BAHM used to design and size stormwater treatment units so that increased runoff is detained.

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
						complete by 9/30/16							

Sample Reporting Table C.3.b. Footnotes

1. If a project is being constructed in Phases, use a separate row entry for each Phase.
2. State the watershed(s) that the Regulated Project drains to. Optional but recommended: Also state the downstream watershed(s).
3. State both the total new impervious surface area and the total replaced impervious surface area, as applicable.
4. For redevelopment projects state both the pre-project impervious surface area and the post-project impervious surface area.
5. State project application date; application deemed complete date; and final, major, staff-level discretionary review and approval date.
6. List stormwater treatment system(s) installed onsite or at a joint stormwater treatment system facility.
7. For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.iv.(2)(m)(i) for the offsite project.
8. For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.iv.(2)(m)(ii) for the Regional Project.
9. If HM control is not required, state why not.
10. If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

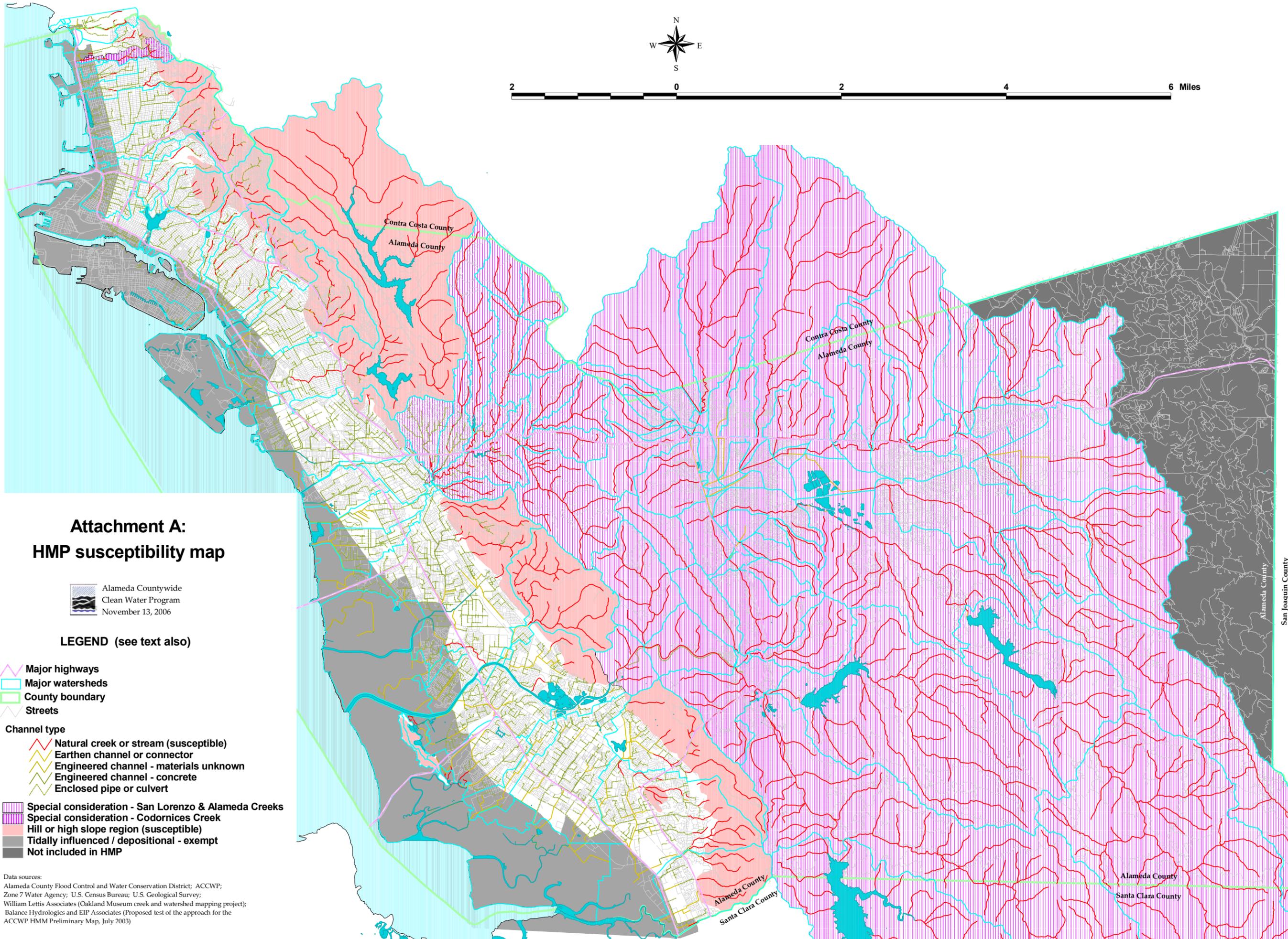
Instructions for Provision C.3.b. Sample Reporting Table

1. **Project Name, Number, Location, and Street Address** – Include the following information:
 - Name of the project
 - Number of the project (if applicable)
 - Location of the project with cross streets
 - Street address of the project (if available)
2. **Name of Developer, Project Phase Number, Project Type, and Project Description** – Include the following information:
 - Name of the developer
 - Project phase name and/or number (only if the project is being developed in phases) – each phase should have a separate row entry
 - Type of development (i.e., new and/or redevelopment)
 - Description of development (e.g., 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse)
3. **Project Watershed**
 - State the watershed(s) that the Project drains into
 - Optional but recommended: Also state the downstream watershed(s)
4. **Total Site Area and Total Area of Land Disturbed** – State the total site area and the total area of land disturbed.
5. **Total New and/or Replaced Impervious Surface Area**
 - State the total new impervious surface area
 - State the total replaced impervious surface area, as applicable
6. **Total Pre- and Post-Project Impervious Surface Area** – For redevelopment projects, state both the pre-project impervious surface area and the post-project impervious surface area.
7. **Status of Project** – Include the following information:
 - Project application submittal date
 - Project application deemed complete date
 - Final, major, staff-level discretionary review and approval date
 - Whether the project has been completed. If not, the estimated project completion date.

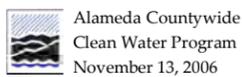
8. **Source Control Measures** – List all source control measures that have been or will be included in the project.
9. **Site Design Measures** – List all site design measures that have been or will be included in the project.
10. **Treatment Systems Installed** – List all post-construction stormwater treatment system(s) installed onsite and/or at a joint stormwater treatment system facility.
11. **Operation and Maintenance Responsibility Mechanism** – List the legal mechanism(s) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
12. **Hydraulic Sizing Criteria Used** – List the hydraulic sizing criteria used for the Project.
13. **Alternative Compliance Measures**
 - **Option 1: LID Treatment at an Offsite Location (Provision C.3.e.i.(1))** – On a separate page, give a discussion of the alternative compliance project including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
 - **Option 2: Payment of In-Lieu Fees (Provision C.3.e.i.(2))** – On a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii).
14. **HM Controls**
 - If HM control is not required, state why not
 - If HM control is required, state control method used (e.g., method to design and size device(s), method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basins, or in-stream control)

ATTACHMENT C

Provision C.3.g. Hydromodification Applicability Maps



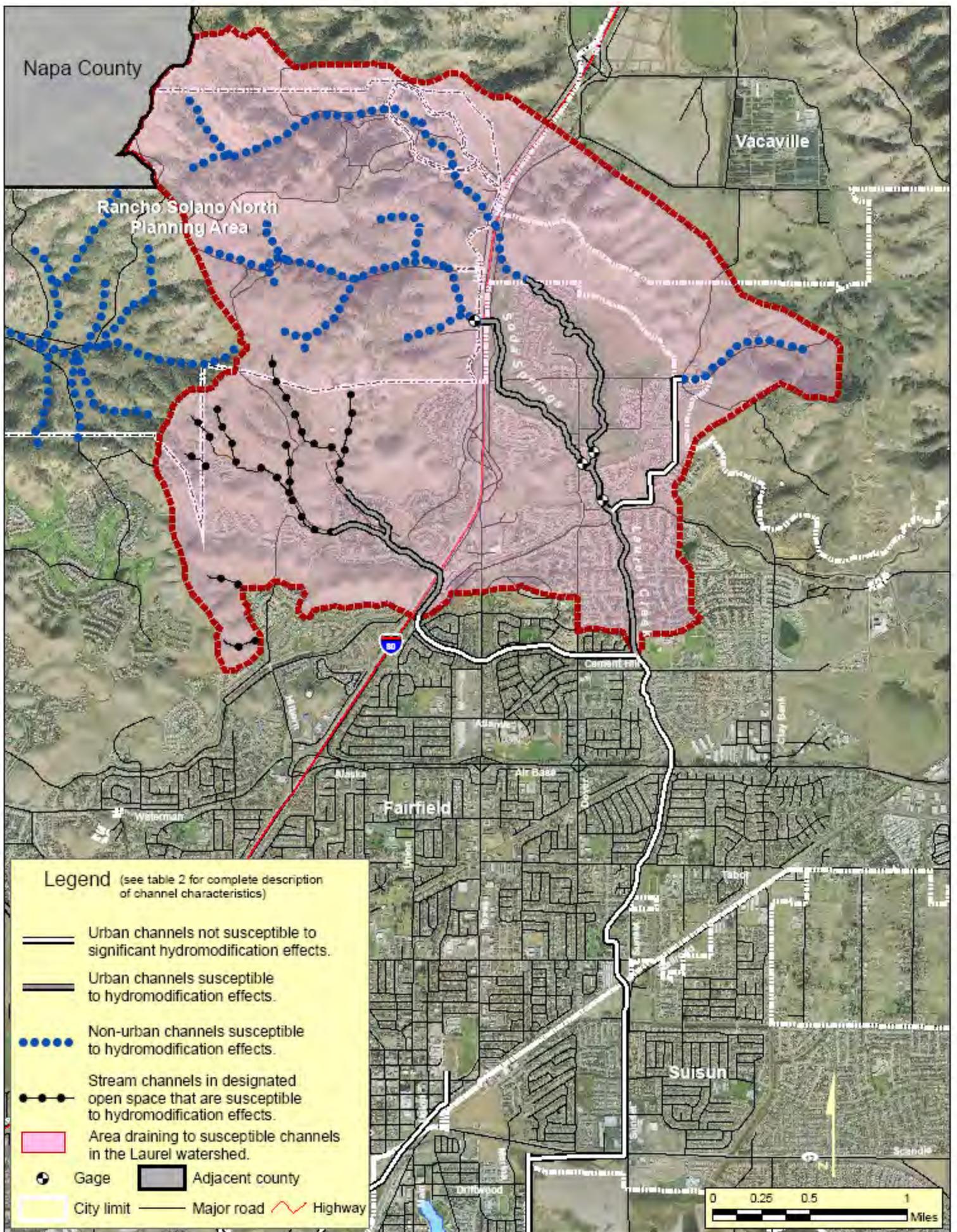
Attachment A: HMP susceptibility map



LEGEND (see text also)

- Major highways
- Major watersheds
- County boundary
- Streets
- Channel type**
 - Natural creek or stream (susceptible)
 - Earthen channel or connector
 - Engineered channel - materials unknown
 - Engineered channel - concrete
 - Enclosed pipe or culvert
- Special consideration - San Lorenzo & Alameda Creeks
- Special consideration - Codornices Creek
- Hill or high slope region (susceptible)
- Tidally influenced / depositional - exempt
- Not included in HMP

Data sources:
Alameda County Flood Control and Water Conservation District; ACCWP;
Zone 7 Water Agency; U.S. Census Bureau; U.S. Geological Survey;
William Lettis Associates (Oakland Museum creek and watershed mapping project);
Balance Hydrologics and EIP Associates (Proposed test of the approach for the
ACCWP HMM Preliminary Map, July 2003)



Source: Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas (north of Cement Hill Road, for example).

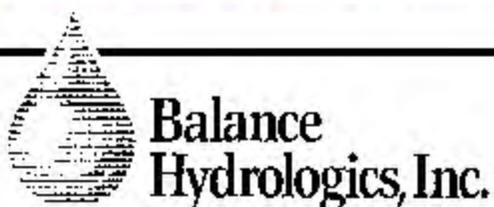
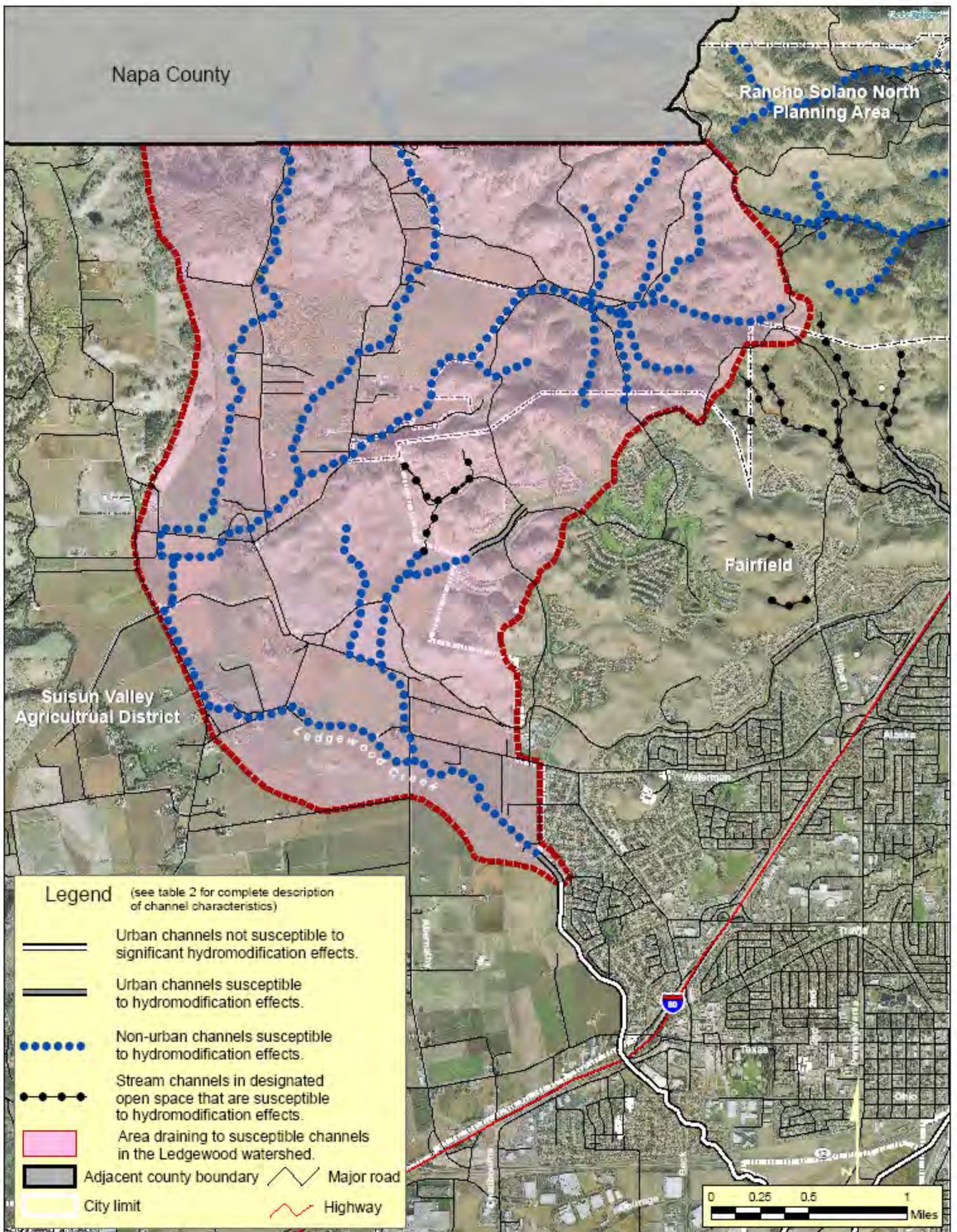


Figure 2. Map showing HMP channel Classification for the Laurel Creek watershed. The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map). Hydromodification controls are not required for projects that drain directly to non-susceptible urban channels.



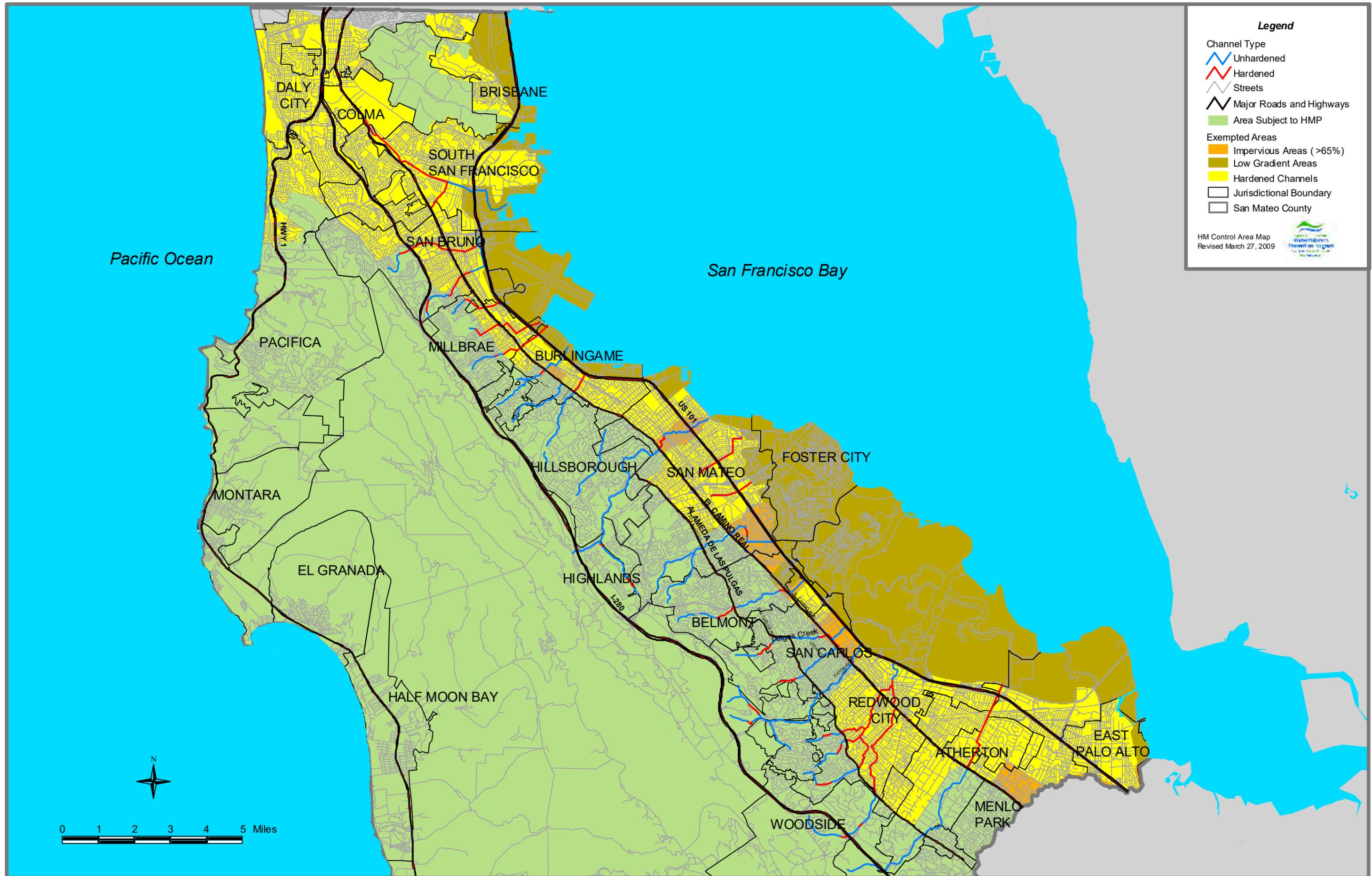
Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas, as shown in the aerial photo.



**Balance
Hydrologics, Inc.**

Figure 3. Map showing HMP channel Classification for the Ledgewood Creek watershed.

The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map), however areas outside the City of Fairfield are not included in this permit unless annexed by the city. The non-developed areas within the current city limits are designated open space in relatively steep terrain, and are unlikely to be converted to urban areas however the HMP still applies in these areas.



Legend

Channel Type

- Unhardened
- Hardened

Streets

Major Roads and Highways

Area Subject to HMP

Exempted Areas

- Impervious Areas (>65%)
- Low Gradient Areas
- Hardened Channels

Jurisdictional Boundary

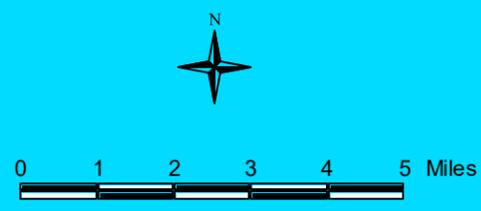
San Mateo County

HM Control Area Map
Revised March 27, 2009

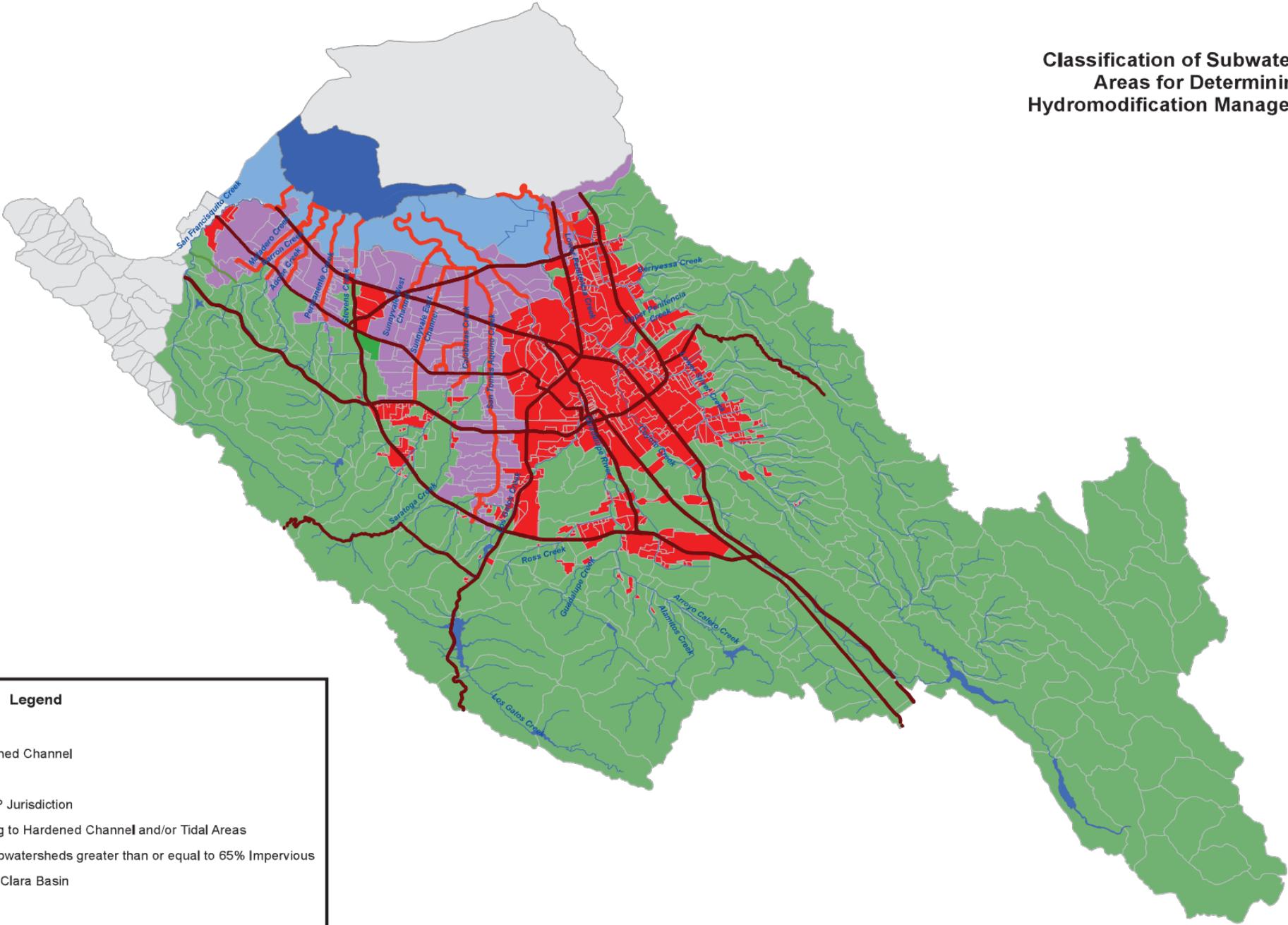


Pacific Ocean

San Francisco Bay



Classification of Subwatersheds and Catchment Areas for Determining Applicability of Hydromodification Management (HM) Requirements

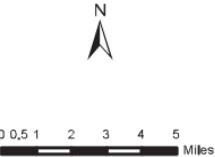


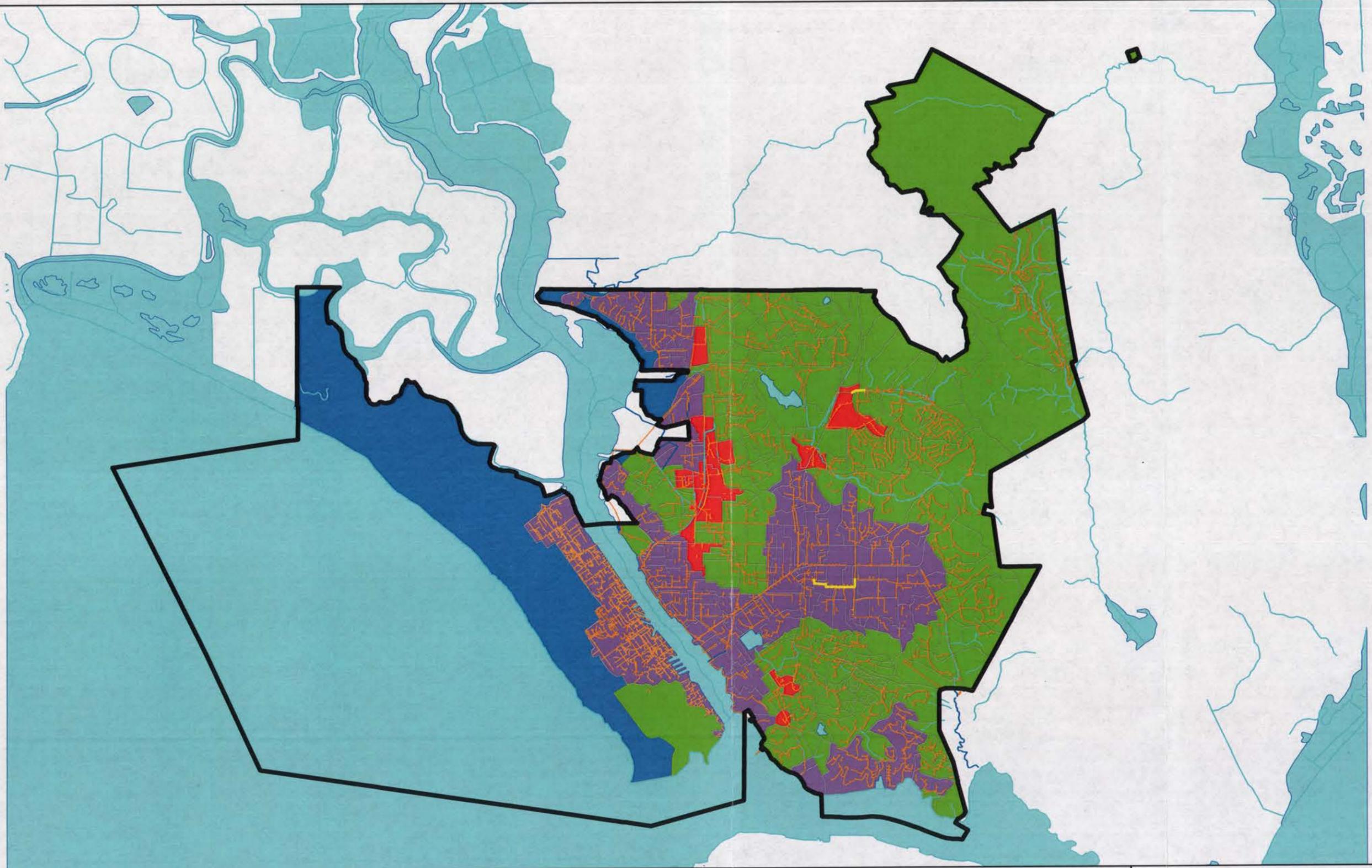
Legend

- Major Roads
- Continuously Hardened Channel
- Major Creeks
- Outside SCVURPPP Jurisdiction
- Catchments Draining to Hardened Channel and/or Tidal Areas
- Catchments and Subwatersheds greater than or equal to 65% Impervious
- Reservoirs in Santa Clara Basin
- Baylands
- Subwatersheds less than 65% Impervious

Revision Date: November 2010

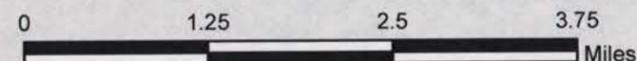
This map contains revisions to the March 2009 version to reflect updated impervious surface data and/or catchment boundaries in the Cities of San Jose, Sunnyvale, Mountain View, and Milpitas, as described in the report to the Water Board dated October 14, 2010, consistent with the HM applicability criteria set forth in Attachment F, Section 4 of the MRP.





Legend

- HMP Boundary
- Fully Hardened Channels
- Non-Hardened Channels (Non-Tidal)
- Non-Hardened Channels (Tidal)
- Storm Drain System
- Open Water
- Areas Draining to Continuously Hardened Conveyances to the Bay
- HMP Applicable Areas
- Subcatchments with greater than or equal to 65% Impervious
- Baylands



HMP Applicability Map

Vallejo HMP



WW1538

April 2013

Figure

3-1

S7-0623

ATTACHMENT D

Provision C.8. Standard Monitoring Provisions

All monitoring activities shall meet the following requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]
2. Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, and copies of all reports required by this Order for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Water Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and,
 - f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
5. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the monitoring Provisions. [40 CFR 122.41(l)(4)(iii)]
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Permittees shall instruct their laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The

Permittee must submit documentation from the laboratory to the Water Board for approval prior to raising the ML for any priority toxic pollutant.

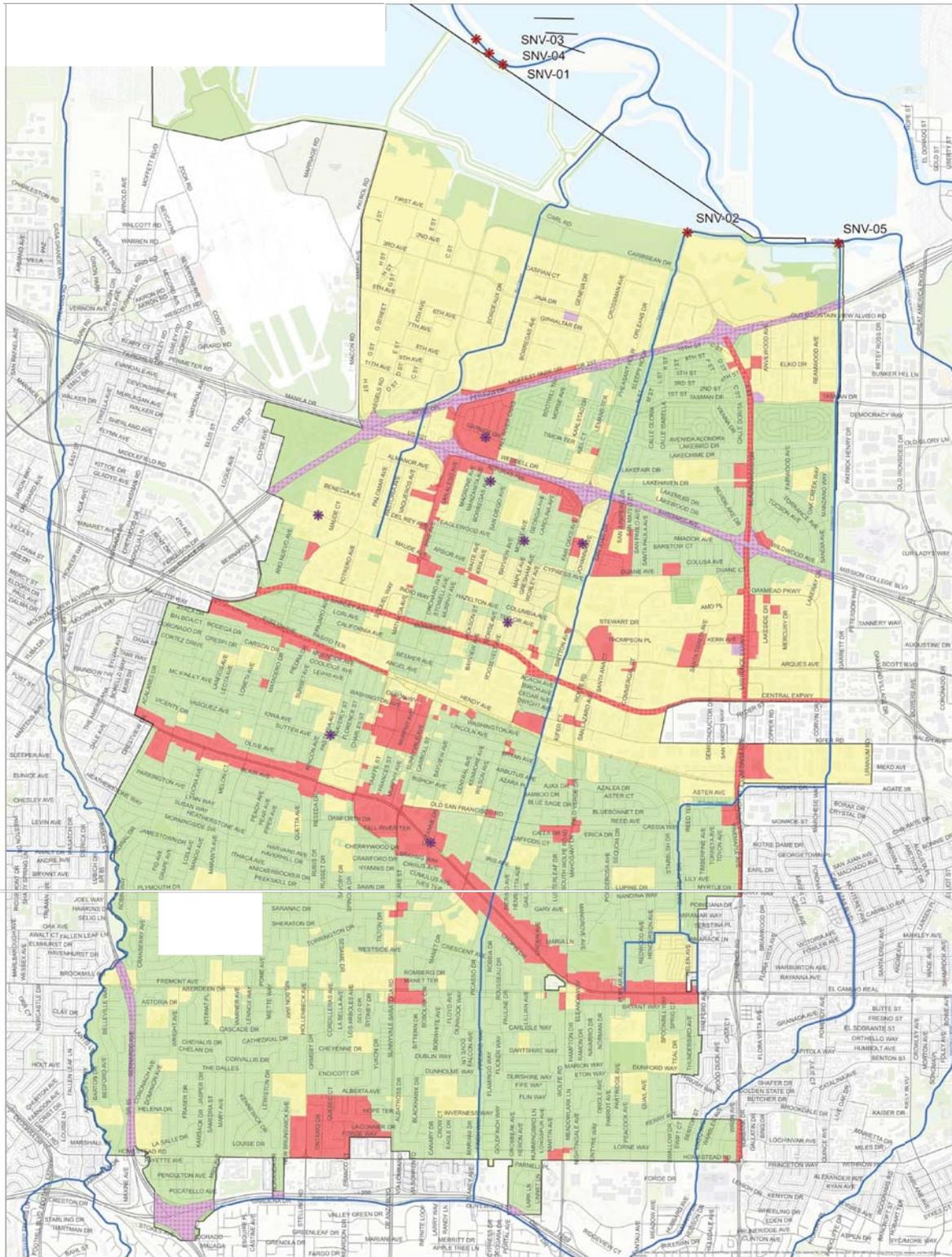
8. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]
9. If a Permittee monitors any pollutant more frequently than required by the Permit, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the reports requested by the Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT E

Supporting Information for Provision C.10.

Example Trash Generation Rate Map

303(d) Trash Resolution and Staff Report February 2009



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

RESOLUTION NO. R2-2009-0008

**RECOMMENDING CHANGES TO THE LIST OF WATER BODIES AS REQUIRED
IN SECTION 303(d) OF THE CLEAN WATER ACT**

WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. Section 305(b) of the federal Clean Water Act requires the State to prepare a biennial update of an assessment of the waters within the State; and
2. Section 303(d) of the federal Clean Water Act requires the State to identify waters within the State for which water quality standards are not attained; and
3. The Water Board actively solicited water quality information from the public on December 4, 2006, and received 16 data and information submittals; and
4. Water Board staff assembled and considered all readily available data to assess water quality conditions and prepared fact sheets supporting recommendations for additions, deletions and changes to the existing list of impaired water bodies consistent with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy); and
5. Water Board staff provided advanced notice and opportunity for public comment on the draft recommendations for public review during a 45-day public comment period commencing on October 30, 2008; and
6. Water Board staff developed written responses to all public comments received and revised the supporting staff report and water body fact sheets for the Water Board's consideration; and
7. The Listing Policy requires that the Water Board consider and approve each proposed list change as documented in a water body fact sheet; and
8. On January 14, 2009, the Water Board held a public hearing to consider the recommendations to change the 303(d) list; and
9. On February 11, 2009, the Water Board held a second public hearing to consider all testimony and comments, both oral and written, regarding the 2008 Water Quality Assessment and 303(d) list for the San Francisco Bay Region.

THEREFORE, BE IT RESOLVED that the Water Board approves each proposed 303(d) list addition, deletion or change as documented in the attached Staff Report.

BE IT FURTHER RESOLVED that the Water Board, in fulfillment of the requirements described in Sections 305(b) and 303(d) of the federal Clean Water Act, hereby authorizes the Executive Officer to transmit the Water Board's assessment, including recommended modifications to the section 303(d) list, as detailed in the attached Staff Report dated February 11, 2009, and associated water body Fact Sheets to the State Water Resources Control Board for approval of the 303(d) list and inclusion in the 2008 California Integrated Report on Water Quality.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the Water Board, San Francisco Bay Region, on February 11, 2009.



Digitally signed
by Bruce Wolfe
Date: 2009.02.13
16:42:14 -08'00'

BRUCE H. WOLFE
Executive Officer

Attachment: Staff Report dated February 11, 2009, Evaluation of Water Quality Conditions for the San Francisco Bay Region - Proposed Revisions to Section 303(d) List

STAFF REPORT

EVALUATION OF WATER QUALITY CONDITIONS FOR THE SAN FRANCISCO BAY REGION

PROPOSED REVISIONS TO SECTION 303(d) LIST

February 2009



San Francisco Bay Regional
Water Quality Control Board

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APPENDIX B	SUMMARY OF DATA RECEIVED AND DATA QUALITY EVALUATION
APPENDIX C	WATER BODY FACT SHEETS – available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/303dlist.shtml

1 Introduction

One of the San Francisco Bay Water Board's functions is to evaluate the water quality condition of waters in the San Francisco Bay Region. To accomplish this goal, staff gathers and evaluates data that are the basis of its water quality assessments. This staff report presents the results of staff's review and consideration of the available water quality data for the Region, including data submitted by the public. One important outcome of the assessment process is the identification of water bodies that are being proposed for inclusion on the list of impaired water bodies. Under federal Clean Water Act (CWA) regulations, the State is required every two years to report to the U.S. EPA on the status of water quality in the State (Section 305(b) water quality assessment), and provide a list of impaired water bodies (Section 303(d) list). Impaired water bodies are those where water quality standards are not met or expected to be met after implementation of technology based requirements of the CWA.

The 303(d) list of impaired waters must include a description of the pollutants causing the violation of water quality standards. As defined in CWA and federal regulations, water quality standards include the designated uses of a water body, the adopted water quality criteria, and the State's antidegradation policy. For water quality limited segments included on the 303(d) list, the State is required to develop a Total Maximum Daily Load (TMDL) to address the impairment. A TMDL is defined as the "sum of the individual waste load allocations for point sources and load allocations for non-point sources and natural background" (40 CFR130.2) such that the capacity of the water body to assimilate pollutant loadings (the loading capacity) is not exceeded. The federal requirement for setting priorities on which TMDLs will be developed is addressed in the State Board's *2004 Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy)* by the establishment of schedules for TMDL development.

The last review of the 303(d) list and update occurred in 2006. The review was based on the Listing Policy developed in 2004. For the 2008 update, the Water Board is considering for approval, recommendations on the conditions of waters in the Region, applying the Listing Policy in the process.

This staff report presents the current status of water quality in the San Francisco Bay Region for water bodies with readily available data, and identifies the methods and data used to evaluate water quality status. The report identifies the proposed additions, deletions, and changes to the 2006 303(d) list. The water quality assessments also result in the identification of water bodies where water quality standards are met or where not enough information is available to accurately assess water quality. The results of the water quality assessments are compiled into a statewide integrated report referred to as the 303(d)/305(b) Integrated Report (Integrated Report) by the State Board.

The State Board will include the Water Boards' listing/delisting recommendations in its preparation of the statewide 303(d) list for submission to the U.S. EPA. The statewide 303(d) list will be part of the Integrated Report. The State Board's deliberative process will be conducted in 2009.

Appendix A of this staff report includes the public solicitation letters requesting that the public submit any and all available data to support the assessment of water quality in the Region. Appendix B provides a summary of the data received from the public and an assessment of data quality. Appendix C refers to the Fact Sheets supporting the 303(d) list change recommendations. The Fact Sheets are available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/303dlist.shtml Fact Sheets showing water bodies that support at least some beneficial uses, water bodies not listed due to insufficient information and revisions to the 2006 303(d) list are also available for viewing by following the link above.

2 Listing Policy and Evaluation Criteria

The proposed 2008 303(d) list of impaired water bodies in the San Francisco Bay Region was developed in accordance with the Listing Policy (SWRCB 2004). The Listing Policy establishes a standardized approach for developing California's section 303(d) list. It outlines an approach that provides the rules for making listing decisions based upon different kinds of data and establishes a systematic framework for statistical analysis of water quality data. The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Decision rules for listing and delisting are provided for: chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisances such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; and degradation of aquatic life populations and communities.

Listing and delisting decisions were made in accordance with the Listing Policy, using all applicable narrative and numeric water quality criteria contained in the San Francisco Bay Basin Plan and in the California and National Toxic Rules. The Listing Policy specifies the frequency of exceedance of applicable water quality objectives that is necessary to make a determination that the water is impaired. When applying narrative water quality criteria, staff used guidelines developed by the U.S. EPA and other government agencies together with findings published in the scientific peer-reviewed literature to interpret data and evaluate the water quality conditions.

3 Information Received and Analyzed

3.1 Data solicitation

Federal regulation [(40 CFR § 130.7(b)(5))] states that "Each State shall assemble and evaluate all existing and readily available water quality-related data and information" when developing the 303(d) list. In December 2006, Water Board staff solicited the public to submit any and all water quality data to be considered in preparation of the 2008 303(d) list and 305(b) report.

This solicitation established a data submittal deadline of February 28, 2007. On January 30, 2007, staff transmitted a notice clarifying that there were no limits on the type or format of data and information that the public could provide to the Water Boards for their assessment. The notices provided to the public can be found in Appendix A of this report.

Appendix B contains a summary of the data and information submitted to the Water Board for consideration in the 2008 303(d) listing process. We received 15 submissions in response to the data solicitation, including multiple requests to list water bodies, two requests to delist and/or not to list water bodies as well as data sets without any accompanying request to list or delist. Water Board staff evaluated the submitted data in accordance with the Listing Policy, taking into account spatial and temporal representativeness and quality (Appendix B). The submissions and listing requests covered four major categories of pollutants and stressors including (1) trash; (2) general water quality parameters such as dissolved oxygen and temperature; (3) nutrients and biostimulatory substances; and (4) suspended solids, sedimentation /siltation.

3.2 Data analysis and recommendations

The assessment process began by identifying and compiling all readily available water quality data as described above. Then, staff systematically reviewed these data sets. Due to the relatively limited number of data sets identified through the solicitation process, much of the effort focused on reviewing the available data collected by the Surface Water Ambient Monitoring Program (SWAMP) and the Regional Monitoring Program (RMP). Staff also developed an approach for interpreting the photographic and narrative documentation for trash relative to applicable water quality standards, consistent with the Listing Policy. In addition, beach water quality data collected by county health departments and stored in the State Board Beach Water Quality Database were evaluated to determine whether the most recently collected data would result in new listing or de-listing decisions for our Region. No changes to the 2006 303(d) list were identified.

The SWAMP data include field surveys of water column chemistry, sediment chemistry, sediment toxicity, and water toxicity data as well as ancillary data on factors such as flows, biological community and physical habitat indicators. SWAMP was designed to provide information necessary to effectively manage the State's water resources and, subsequently, facilitate assessment of water quality under sections 305(b) and 303(d) of the Clean Water Act. Objectives of SWAMP include: (1) assessing the physical, chemical, and biological condition of water bodies in each region in order to determine if water bodies are impaired and beneficial uses are being protected; (2) generating data and information during different seasonal conditions; and (3) generating data and information that is somewhat evenly distributed across a water body to provide a screening level assessment of water quality. These objectives ensure that the SWAMP data meet all quality requirements of the Listing Policy.

For the purpose of analyzing the data and developing the proposed revisions to the 303(d) list, the Listing Policy recommends a "line of evidence" approach to establish both whether a water

body is impaired and what pollutant is causing the impairment. The lines of evidence in support of listing and/or delisting decisions for each affected water body are summarized in a water body-specific fact sheet. Fact sheets were developed for each water body for which sufficient data were available to evaluate during the review.

3.2.1 SWAMP data evaluation

Over the 5-year period (2001 – 2005) SWAMP conducted water quality monitoring in 37 watersheds in the Region (SFBRWQCB 2007c, 2007d). Data were collected at multiple locations within each water body over three hydrologic cycles including the wet season (January through March), the spring/decreasing flow season (April through May) and the dry season (June through October). Altogether data from over 190 sampling locations were evaluated. Selected sites in each water body were sampled to determine benthic macroinvertebrate assemblages, temperature, dissolved oxygen, nutrients, trace metals, trace organic compounds, toxicity, and coliforms. Temporal variability in basic water quality (temperature, dissolved oxygen (DO), pH, and specific conductance) was determined by continuous deployment of field measurement devices. These continuous deployments typically lasted one to two weeks and were conducted three to four times per year. Water, sediment and tissue samples that were collected were analyzed to determine concentrations of more than 230 constituents.

The first step of the water quality assessment involved screening all the data against the available water quality criteria and guidelines. For pollutants with applicable numeric water quality criteria, the impairment status was evaluated by comparing the concentration data with existing water and sediment objectives and standards contained chiefly in the San Francisco Bay Basin Plan, California and National Toxic Rules and U.S. EPA guidelines. When only narrative water quality objectives existed, staff identified evaluation guidelines protective of the beneficial use and specified the conditions above which impacts were minimal. Table 1 and Table 2 show a complete list of numeric criteria and evaluation guidelines used in this assessment.

Table 1: Water quality thresholds for 303(d) data screening of freshwater creeks for selected beneficial uses including aquatic life, municipal and domestic supply (MUN), agricultural supply (AGR) and water contact recreation (REC1)

<i>Analyte</i>	<i>Description of Standard</i>	<i>Numeric Limit</i>	<i>Units</i>	<i>Reference</i>
Field measures				
Temperature	Maximum, salmonid	24	° C	USEPA, 1977
	7-day mean, coho	14.8	° C	Sullivan <i>et al.</i> , 2000
	7-day mean, steelhead	17	° C	Sullivan <i>et al.</i> , 2000
Oxygen, dissolved	Minimum, warmwater	5	mg/L	Basin Plan, 2007b
	Minimum, coldwater	7	mg/L	Basin Plan, 2007b
pH	Range	6.5 to 8.5	S.U.	Basin Plan, 2007b
	Min for AGR	200	µS	Basin Plan, 2007b
Specific conductance	Max for AGR	3000	µS	Basin Plan, 2007b
	Max for MUN	900	µS	Basin Plan, 2007b
Salts – AGR only				
Salt thresholds apply only to waters with AGR beneficial use assigned.				
Boron	Maximum	0.5	mg/L	Basin Plan, 2007b
Chloride	Maximum	142	mg/L	Basin Plan, 2007b
Cadmium, copper, nickel, silver, and zinc values assume a hardness of 100 mg/L CaCO3. Values at other hardness levels must be calculated using formulas in the Basin Plan.				
Metals				
Arsenic, dissolved	1-hour average WQO	340	µg/L	Basin Plan, 2007b
	4-day average WQO	150		
Cadmium total	1-hour average WQO	5.9	µg/L	Basin Plan, 2007b
	4-day average WQO	1.1		
Chromium VI, dissolved	1-hour average WQO	10	µg/L	Basin Plan, 2007b
	4-day average WQO	11		
Copper dissolved	1-hour average WQO	13	µg/L	Basin Plan, 2007b
	4-day average WQO	9		
Lead dissolved	1-hour average WQO	60	µg/L	Basin Plan, 2007b
	4-day average WQO	2.5		
Mercury total	1-hour average WQO	2.4	µg/L	Basin Plan, 2007b
	4-day average WQO	0.025		
Nickel dissolved	1-hour average WQO	470	µg/L	Basin Plan, 2007b
	4-day average WQO	52		
Selenium total	4-day average WQO	3	µg/L	Basin Plan, 2007b
	1-hour average WQO	20		
Silver, dissolved	1-hour average WQO	3.4	µg/L	Basin Plan, 2007b
Zinc dissolved	1-hour average WQO	120	µg/L	Basin Plan, 2007b
	4-day average WQO	120		
These Metals thresholds apply only to waters with MUN beneficial use assigned.				
Metals -- MUN only				
Manganese, total	Maximum	50	µg/L	Basin Plan, 2007b
Mercury, total	Maximum	2	µg/L	Basin Plan, 2007b
Organics				
PCBs	Freshwater Criterion Continuous Concentration	0.014	µg/L	CTR
Chlorpyrifos	4-day average (chronic)	0.015	µg/L	CVRWQCB, 2006
Dacthal (DCPA)	Instantaneous maximum AWQC	14300	µg/L	CVRWQCB, 2008
Diazinon	1-hour average	0.1	µg/L	SFBRWQCB, 2005
Disulfoton (Disyston)	Instantaneous maximum	0.05	µg/L	CVRWQCB, 2008

<i>Analyte</i>	<i>Description of Standard</i>	<i>Numeric Limit</i>	<i>Units</i>	<i>Reference</i>
Field measures				
	AWQC			
Endosulfan	Continuous 4-day average	0.056	µg/l	CTR
	Instantaneous maximum	0.22		CTR
HCH, gamma- (gamma-BHC, Lindane)	Maximum 1-hour average	0.95	µg/L	CTR
	Instantaneous maximum			
Parathion, methyl	AWQC	0.08	µg/L	CDFG
	Instantaneous maximum			
Thiobencarb	AWQC	3.1	µg/L	CDFG
Pathogens – Water Contact Recreation (REC1)				
E. coli (freshwater)	Steady state (all areas)	126	MPN /100 mL	US EPA, 1986
	Designated beach (max)	235	mL	
Fecal coliform	Geometric mean	200	MPN /100 mL	Basin Plan, 2007b
	90th percentile	400	mL	
Total coliform	Median	240	MPN /100 mL	Basin Plan, 2007b
	Maximum	10000	mL	
MUN thresholds are DOHS recommendations for surface water that serves as drinking water source.				
Fecal coliform	Geometric mean	<20	MPN /100 mL	Basin Plan, 2007b
Total coliform	Geometric mean	<100	mL	
Two-sample t-tests (one-tailed, alpha = 0.05) were performed on station data versus control data.				
For <i>Ceriodaphnia</i> and <i>Pimephales</i> , the null hypothesis tested was that the station response was less than (less growth, survival, etc) the control response.		80	%	Basin Plan (2007b) - "There shall be no chronic/acute toxicity in ambient waters." (3.3.18)
For <i>Selenastrum</i> , where we are testing that station responses are greater than (more growth) or less than (less growth) the control, these two-sample tests have an alpha of 0.10.		80	%	

CTR - (Federal Register, Part III; EPA; 40 CFR Part 131 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule. May 18, 2000)

CDFG - California Department of Fish and Game, Office of Spill Prevention and Emergency Response, Hazard Assessment and Water Quality Criteria documents for pesticides (various dates),

<http://www.cdpr.ca.gov/docs/sw/hazasm.htm>

Table 2: Freshwater sediment quality pollutant thresholds for 303(d) data screening

SQG type: Analyte	Probable effect concentration		Reference
	mg/kg	µg/kg	
<i>Metals</i>			MacDonald et al. 2000
Arsenic	33		
Cadmium	4.98		
Chromium	111		
Copper	149		
Lead	128		
Mercury	1.06		
Nickel	48.6		
Zinc	459		
<i>Organics</i>			MacDonald et al. 2000
Anthracene		845	
Fluorene		536	
Naphthalene		561	
Phenanthrene		1170	
Benz(a)anthracene		1050	
Benzo(a)pyrene		1450	
Chrysene		1290	
Fluoranthene		2230	
Pyrene		1520	
PAH (total)		22800	
PCB (total)		676	
Chlordane		17.6	
Dieldrin		61.8	
DDD (sum op + pp)		28	
DDE (sum op + pp)		31.3	
DDT (sum op + pp)		62.9	
DDT (total)		572	
Endrin		207	
Heptachlor epoxide		16	
HCH, gamma		4.99	

Toxicity

Two-sample t-tests (one-tailed, alpha = 0.05) were performed on station data versus control data.

For *Hyalella*, the null hypothesis tested was that the station response was less than (less growth, survival, etc) the control response. 80% of the control group was the threshold for sediment toxicity.

Basin Plan (2007b) - "There shall be no chronic/acute toxicity in ambient waters." (3.3.18)

3.2.2 Trash

Trash is not a new problem for the Bay Region, but it is a continuing problem both as an aesthetic nuisance, as a serious threat to aquatic life in tributaries, and as a threat to marine life in estuaries and oceans. Data suggest that plastic from trash persists for hundreds of years in the environment and can pose a threat to wildlife through ingestion, entrapment and entanglement, and this plastic can leach potentially harmful chemicals to the aquatic environment. During the 2002 303(d) listing update effort, Staff discussed the water quality impacts associated with trash at some length (SFRWQCB 2001). Water Board staff found that trash threatened water quality in all urban creeks, lakes, and shorelines. Rather than listing all urban creeks at that time, the Water Board urged municipalities to implement trash control measures, assess trash impairments in their jurisdictions and document these assessments in annual reports submitted to the Board. Since 2002, Water Board staff has developed, refined, and implemented (2002 through 2005) a rapid trash assessment method as part of SWAMP (SFBRWQCB 2007a). Other local entities, e.g., the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), also collected trash assessment data. The water quality assessments for trash conducted for this 303(d) update are based on the results of the rapid trash assessment method and interpretation of data submitted by the public using a similar approach.

The data solicitation for this update resulted in the submission of a large quantity of trash-related data and accompanying requests for 303(d) listings. These data consisted mainly of photographs and narrative documentation on the status of trash levels for specific water bodies. In addition to these data, staff compiled and considered rapid trash assessment data collected by SWAMP as well as similar trash assessment data collected by SCVURPPP. The two types of trash data, photographs and trash assessment results, required distinct evaluation methodologies described below. Because there are no numeric water quality criteria for trash, the trash data were reviewed according to the “weight of evidence” guidelines established in section 3.11 of the Listing Policy. After reviewing these data in accordance with the Listing Policy, there were several water bodies for which we did not have compelling evidence to place them on the 303(d) list. These water bodies are identified in Table 3 below. The water bodies recommended for placement on the 303(d) list for trash impairment are identified in Table 4 below, and the lines of evidence are described in detail in the Fact Sheets (Appendix C).

Relevant Beneficial Uses and Water Quality Objectives

Several beneficial uses may be adversely impacted by trash, including recreation, aquatic life, wildlife habitat, and navigation. However, data were not readily available to allow staff to evaluate all beneficial uses possibly impaired by trash. Instead, we focused our review on evaluating impairment of the non-contact water recreation (REC-2) and wildlife habitat (WILD) beneficial uses, because these uses can be most easily evaluated through review of available trash data. Impairment of REC-2 can be readily evaluated based on the level of trash present. Impairment of WILD can be evaluated based on the level of certain types of trash associated with threat to wildlife, a beneficial use that implicitly includes aquatic life.

Beneficial uses adversely impacted by trash are, in turn, supported by the following set of narrative water quality objectives and Basin Plan prohibitions. The Basin Plan (Table 4-1,

Prohibition Number 7) prohibits discharge of “rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.” The Basin Plan (Section 3.3.6) also has a narrative objective for floating material, “waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.” Last, the Basin Plan (Section 3.3.13) has a narrative objective for settleable material, “waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.”

Table 3: List of water bodies with insufficient evidence to establish trash impairment

Water Body	Designated/Potential Uses	Supporting Data
Adobe Creek	Non-Contact Recreation and Wildlife Habitat	RTA ¹ , Photos
Alamitos Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Alhambra Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Arroyo Corte Madera del Presidio	Non-Contact Recreation and Wildlife Habitat	Photos
Arroyo Los Positas	Non-Contact Recreation and Wildlife Habitat	RTA
Arroyo Mocho	Non-Contact Recreation and Wildlife Habitat	RTA
Arroyo Seco	Non-Contact Recreation and Wildlife Habitat	Photos
Barron Basin	Non-Contact Recreation and Wildlife Habitat	RTA
Berryessa Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Calabazas Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Corte Madera Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Lagunitas Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Las Trampas Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Lafayette Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Ledgewood Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Los Gatos Creek	Non-Contact Recreation and Wildlife Habitat	RTA, Photos
McCoy Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Pacheco Slough	Non-Contact Recreation and Wildlife Habitat	Photos
Randall Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Rodeo Creek	Non-Contact Recreation and Wildlife Habitat	RTA
San Gregorio Creek	Non-Contact Recreation and Wildlife Habitat	RTA
San Ramon Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Sulphur Creek	Non-Contact Recreation and Wildlife Habitat	Photos
Thompson Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Upper Penitencia Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Vista Grande Canal	Non-Contact Recreation and Wildlife Habitat	Photos
Walnut Creek	Non-Contact Recreation and Wildlife Habitat	Photos

Wildcat Creek	Non-Contact Recreation and Wildlife Habitat	RTA
Yerba Buena Creek	Non-Contact Recreation and Wildlife Habitat	RTA

¹ RTA – Rapid Trash Assessment

Evaluation of Trash Assessment Results

The Water Board's rapid trash assessment method generates site-specific scores on a scale from 0 to 120, with higher scores indicating cleaner sites. The method also documents the number of pieces of trash per one hundred feet of stream or shoreline, and the rate of return of trash under different hydrologic conditions. The trash assessment protocol involves picking up and tallying all of the trash items found within the defined boundaries of a site. When repeated several times throughout a year, this procedure allows for the assessment of temporal changes in impairment, usage patterns, and trash deposition rates under wet and dry weather conditions (SFBRWQCB 2007a).

The Rapid Trash Assessment (RTA) method evaluates six parameters of trash impacts (level of trash, number of items found, threat to wildlife, threat to human health, illegal dumping, and trash accumulation). For purposes of determining impairment status, Water Board staff evaluated the magnitudes of the "level of trash" and "threat to aquatic life" parameters. If the "level of trash" parameter score fell in the 'poor condition category' (scores 0-5), REC-2 is deemed not supported. According to the RTA, the "poor condition" score corresponds to a level of trash that "distracts the eye on first glance. Stream, bank surfaces, and immediate riparian zone contain substantial levels of litter and debris (>100 pieces). This score suggests that the site is being used frequently by people: many cans, bottles, and food wrappers, blankets, clothing." SCVURPPP developed a similar "level of trash" parameter that can be interpreted similarly. Water Board staff reason that if there is sufficient trash to "distract the eye on first glance" and there are substantial levels of litter and debris, then the non-contact beneficial use would be impaired.

The second RTA parameter considered is the "threat to aquatic life" category. If this parameter score fell in the 'poor condition' category (scores 0-5), then WILD is deemed not supported. According to the RTA, the 'poor condition' score corresponds to a "large amount (>50 pieces) of transportable, persistent, buoyant litter (such as hard or soft plastics, balloons, styrofoam, cigarette butts); toxic items (such as batteries, lighters, or spray cans); large clumps of yard waste or dumped leaf litter; or large amount (>50 pieces) of settleable glass or metal."

Water Board staff used the "threat to aquatic life" parameter to assess impairment to wildlife habitat beneficial uses (WILD) because the type of trash measured by this parameter is particularly problematic for wildlife (including aquatic life). The two primary problems that trash poses to wildlife are entanglement and ingestion. Mammals, turtles, birds, fish, and crustaceans all have been affected by entanglement in or ingestion of floatable debris. Many of the species most vulnerable to the problems of floatable debris are endangered or threatened. Entanglement is harmful to wildlife because it can cause wounds that can lead to infections or loss of limbs and also cause strangulation, suffocation, drowning, or limited escape from predators (EPA 2002). Ingestion of trash can lead to starvation or malnutrition if the ingested items block the intestinal tract, preventing digestion, or accumulate in the digestive tract, making the animal feel "full" and lessening its desire to feed. Ingestion of sharp objects can damage the mouth, digestive tract and/or stomach lining and cause infection or pain. Ingested items can also block air passages and prevent breathing, thereby causing death (EPA 2002).

The Urban Rapid Trash Assessment (URTA) developed by SCVURPPP is a very slightly modified version of the original SWAMP RTA. It was modified to make it easier to apply in urban creeks, and the way in which category scores are interpreted was also modified. However, the URTA has an identical parameter assessing threat to aquatic life (wildlife) by characterizing the amount of “Transportable, Persistent, Buoyant Litter.” If the raw score for this parameter fell in the marginal urban or poor condition category (scores 0-10, corresponding to a count of 76-200 pieces of such litter), then WILD is deemed not supported.

Although Water Board staff only considered the “level of trash” and “threat to aquatic life” parameters for determining impairment status, the SWAMP and SCVURPPP trash assessment methods have four additional parameters that can provide additional information about both the condition and cause of the trash encountered during assessment (SFBRWQCB 2007a). The assessments include a parameter indicating the total number of trash items counted on the 100-foot stream reach, both above and below the high water line. This is an efficient parameter to use to obtain a rough comparison of the trash impacts between sites, but it can be misleading because sometimes trash items are broken into many pieces, thus inflating the count.

The “threat to human health” parameter accounts for the number of items that are dangerous to humans who wade or swim in the water, and the presence of pollutants that could accumulate in fish in the downstream environment, such as mercury. The worst conditions for this parameter have the potential for the presence of dangerous bacteria or viruses, such as with medical waste, diapers, and human or pet waste. The “illegal dumping and littering” parameter relates to direct placement of trash items at a site, with “poor” conditions assigned to sites that appear to be dumping or littering locations based on adjacent land use practices or site accessibility. Finally, the “accumulation of trash” parameter can be used to distinguish trash that is transported from upstream locations from dumped trash. This is accomplished by noting indications of age and transport. Faded colors, silt marks, trash wrapped around roots, and signs of decay suggest downstream transport, indicating that the local drainage system facilitates conveyance of trash to water bodies.

Evaluation of Photographic Evidence for Trash

Nearly 900 photos of trash impacts were submitted and evaluated to make impairment determinations. These photos presented a fundamental impairment assessment challenge: how to interpret what can be seen in the photos relative to beneficial use impairment? The method we employed was to view the photos as if the water body was being assessed according to the RTA procedure. One of the co-authors of the RTA inspected every photograph and attempted to establish the RTA score for the “level of trash” and “threat to aquatic life” parameters, which relates to impairment of REC-2 and WILD, respectively. One of the first objectives of this photo inspection was to determine if the quantity and quality of the photos were sufficient to establish these parameter scores. Some photos were not clear enough to accomplish this.

In order to establish that the “Level of Trash” parameter was in the poor condition category, we required that reach-scale (i.e., showing most or all of the reach of the creek being photographed) and close-up photos of stream reaches must demonstrate a similar level of

trashiness as the ‘poor condition’ category of the RTA assessment parameter. In other words, we determined if the visual impression of the photos was consistent with the visual impression the evaluator might have experienced during actual RTA assessments for locations scoring in the ‘poor condition’ category. A similar determination was made for each photo relative to the “threat to aquatic life” parameter.

Spatial and Temporal Representativeness of Trash Impairment

As a general rule, water bodies recommended for inclusion on the 303(d) list for trash are those for which there is evidence of trash problems persisting through space and time. We applied this rule to trash assessment data and photographic data. In order to recommend listing, we typically required both that the water body contain two or more sites that show evidence of trash impairment (according to assessment or photo documentation) and that evidence of trash impairment existed on two or more occasions. There were instances in which a listing recommendation was made based on data for multiple occasions but only at one location if there were no other data available, but these were very rare exceptions. For San Francisco Bay listings, if shoreline or creek mouth sites satisfied these data sufficiency requirements, we recommended that the applicable bay segment be listed. In fact, for the bay segments recommended for listing (Central and Lower), there were at least two shoreline or creek mouth locations with unacceptably high levels of trash.

3.3 Fact sheet development

Water Board staff developed a Fact Sheet for each water body - pollutant combination that resulted in a listing or delisting recommendation, summarizing the data used to make the decision, the criteria used, and the basic water body characteristics. Figure 1 shows a template provided by the State Board and lists all categories of information required to develop a fact sheet and characterize the cause of impairment.

Region:	
Water Body Segment:	
<hr/>	
Pollutant:	
Decision: <i>List/De-List</i>	
<hr/>	
Weight of Evidence	
RWQCB Staff Recommendation	
<u>Line of Evidence:</u>	
<i>Fraction:</i>	<i>Options for this field are none, not recorded, total, dissolved (does not include suspended), and total dissolved.</i>
<i>Matrix:</i>	<i>Options for this field are tissue, water, sediment, N/A. This is the monitoring data sample medium.</i>
<i>Beneficial use(s):</i>	<i>Find appropriate beneficial use in your Region's Basin Plan.</i>
<i>Water Quality Objective/Criteria:</i>	<i>Find in Basin Plan or use CTR or other appropriate water quality objective or criterion and completely cite it here and reference where you found it.</i>
<i>Evaluation Guideline:</i>	<i>If the objective is narrative, use the appropriate evaluation guideline and completely cite it here and reference where you found it.</i>
<i>Data Used to Assess Water Quality:</i>	<i>Summarize data assessed here. What is the total number of samples? How many of these samples exceed the objective/criterion/guideline?</i>
<i>Data References:</i>	<i>Cite the data reference used for this assessment.</i>
<i>Spatial Representation:</i>	<i>Where were the samples collected? How many stations, etc?</i>
<i>Temporal Representation:</i>	<i>When were the samples collected? What was the sampling timeframe, etc?</i>
<i>Water Body Specific Information:</i>	<i>Environmental conditions or factors that might effect data used in assessment [e.g. Fire/Flood/Dry Year event, etc.]</i>
<i>Data Quality Assessment</i>	<i>Excellent, good, fair, poor, unknown, and none</i>
<i>QAPP Information:</i>	<i>Clearly describe the quality assurance plan or document that applies to the data used for this assessment. Reference the QA plan that was used. For example: "Quality Control for the chemical analysis portion of this study was conducted in accordance with Standard Operating Procedure QAQC001.00 (Segawa, 1995)."</i>

Figure 1: Fact sheet template for the 303(d) List

4 Listing Decisions

4.1 Proposed additions to the 303(d) list of impaired water bodies

Table 4 shows all proposed additions to the 303(d) list. Much more comprehensive information is available regarding these new proposed listings in the Fact Sheets (Appendix C). Locations of the water bodies evaluated as impaired during the 2008 listing period are shown in Figure 2 and Figure 3.

Table 4: Proposed 2008 additions to 303(d) list of impaired water bodies

Water Body	Beneficial Uses	Pollutant/ Cause of impairment
Almaden Lake	Commercial and Recreational Collection of Fish, Shellfish, or organisms	Mercury (tissue) ¹
Almaden Reservoir	Commercial and Recreational Collection of Fish, Shellfish, or organisms	Mercury (tissue) ¹
Arroyo Las Positas Creek	Warm Freshwater Habitat	Nutrient/Eutrophication Biological Indicators
Arroyo Mocho Creek	Cold Freshwater Habitat (potential)	Temperature
Codornices Creek	Cold Freshwater Habitat	Temperature
Kirker Creek	Warm Freshwater Habitat	Pyrethroids ² Water Toxicity
Mount Diablo Creek	Cold Freshwater Habitat	Water Toxicity
Permanente Creek	Cold Freshwater Habitat	Selenium Water Toxicity
San Mateo Creek Lower	Wildlife Habitat	Sediment Toxicity
Stevens Creek	Cold Freshwater Habitat	Temperature
Suisun Creek	Cold Freshwater Habitat	Dissolved Oxygen Temperature
Old Alameda Creek	Non-Contact Recreation and Wildlife Habitat	Trash
Baxter Creek	Non-Contact Recreation and Wildlife Habitat	Trash
Cerrito Creek	Non-Contact Recreation and Wildlife Habitat	Trash

¹ The Guadalupe River Watershed TMDL is expected to address this impairment

² San Francisco Bay Urban Creeks Diazinon and Pesticide-Related Toxicity TMDL approved by USEPA on 5/16/07 will address pyrethroids impairment in Kirker Creek.

Water Body	Beneficial Uses	Pollutant/ Cause of impairment
Codornices Creek	Non-Contact Recreation and Wildlife Habitat	Trash
Colma Creek	Non-Contact Recreation and Wildlife Habitat	Trash
Coyote Creek	Non-Contact Recreation and Wildlife Habitat	Trash
Damon Slough	Non-Contact Recreation and Wildlife Habitat	Trash
Grayson Creek	Wildlife Habitat	Trash
Guadalupe River	Non-Contact Recreation and Wildlife Habitat	Trash
Kirker Creek	Wildlife Habitat	Trash
Matadero Creek	Wildlife Habitat	Trash
Permanente Creek	Wildlife Habitat	Trash
Petaluma River	Non-Contact Recreation and Wildlife Habitat	Trash
Rindler Creek	Non-Contact Recreation and Wildlife Habitat	Trash
San Francisco Bay (Central) shoreline	Non-Contact Recreation and Wildlife Habitat	Trash
San Francisco Bay (Lower) shoreline	Non-Contact Recreation and Wildlife Habitat	Trash
San Francisquito Creek	Non-Contact Recreation and Wildlife Habitat	Trash
San Leandro Creek Lower	Non-Contact Recreation and Wildlife Habitat	Trash
San Mateo Creek	Non-Contact Recreation and Wildlife Habitat	Trash
San Pablo Creek	Non-Contact Recreation	Trash
San Tomas Creek	Wildlife Habitat	Trash
Saratoga Creek	Wildlife Habitat	Trash
Sausal Creek	Wildlife Habitat	Trash
Silver Creek	Wildlife Habitat	Trash
Stevens Creek	Wildlife Habitat	Trash
Strawberry Creek	Non-Contact Recreation and Wildlife Habitat	Trash

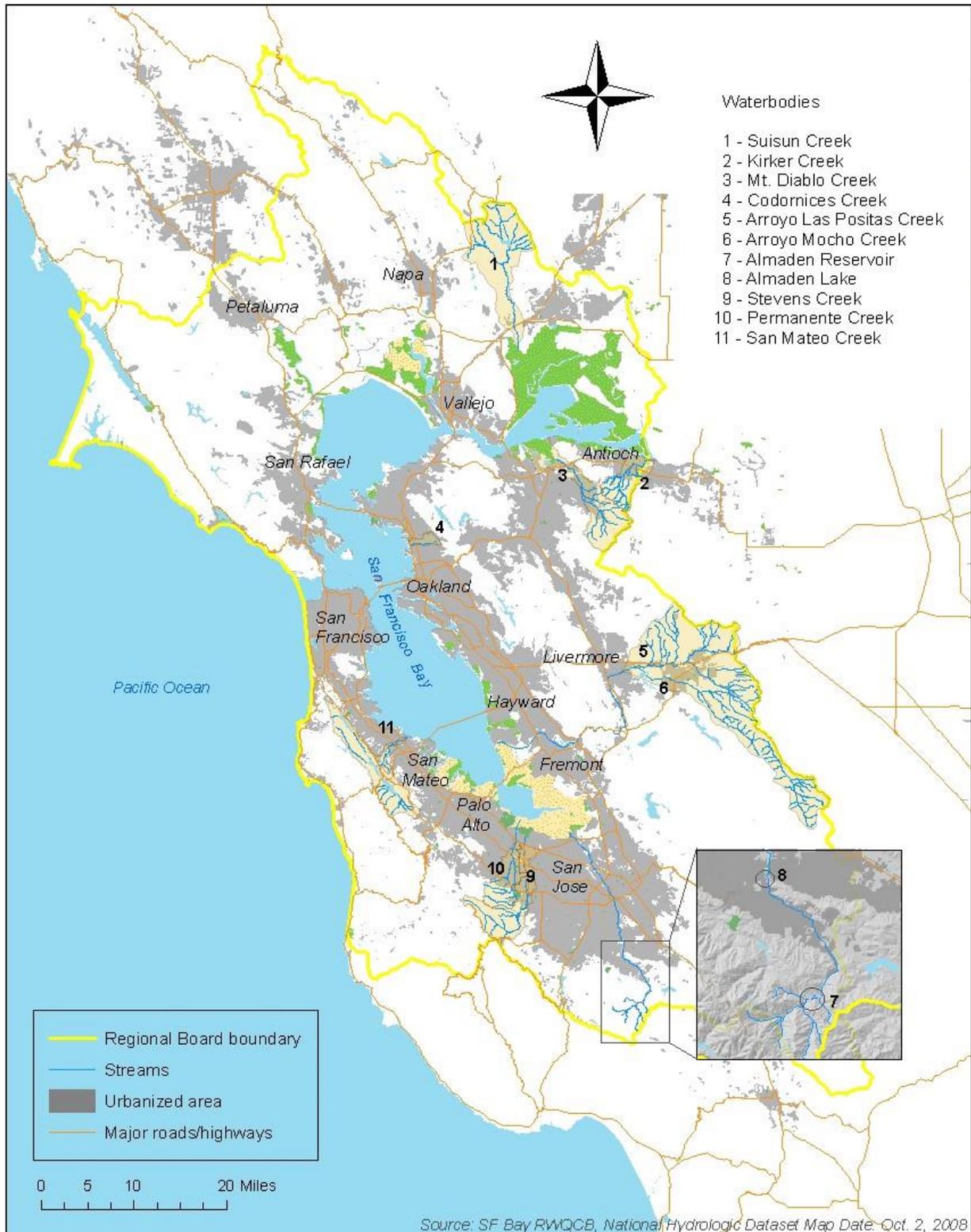


Figure 2: Proposed 2008 new 303(d) listings for toxicants and conventional pollutants

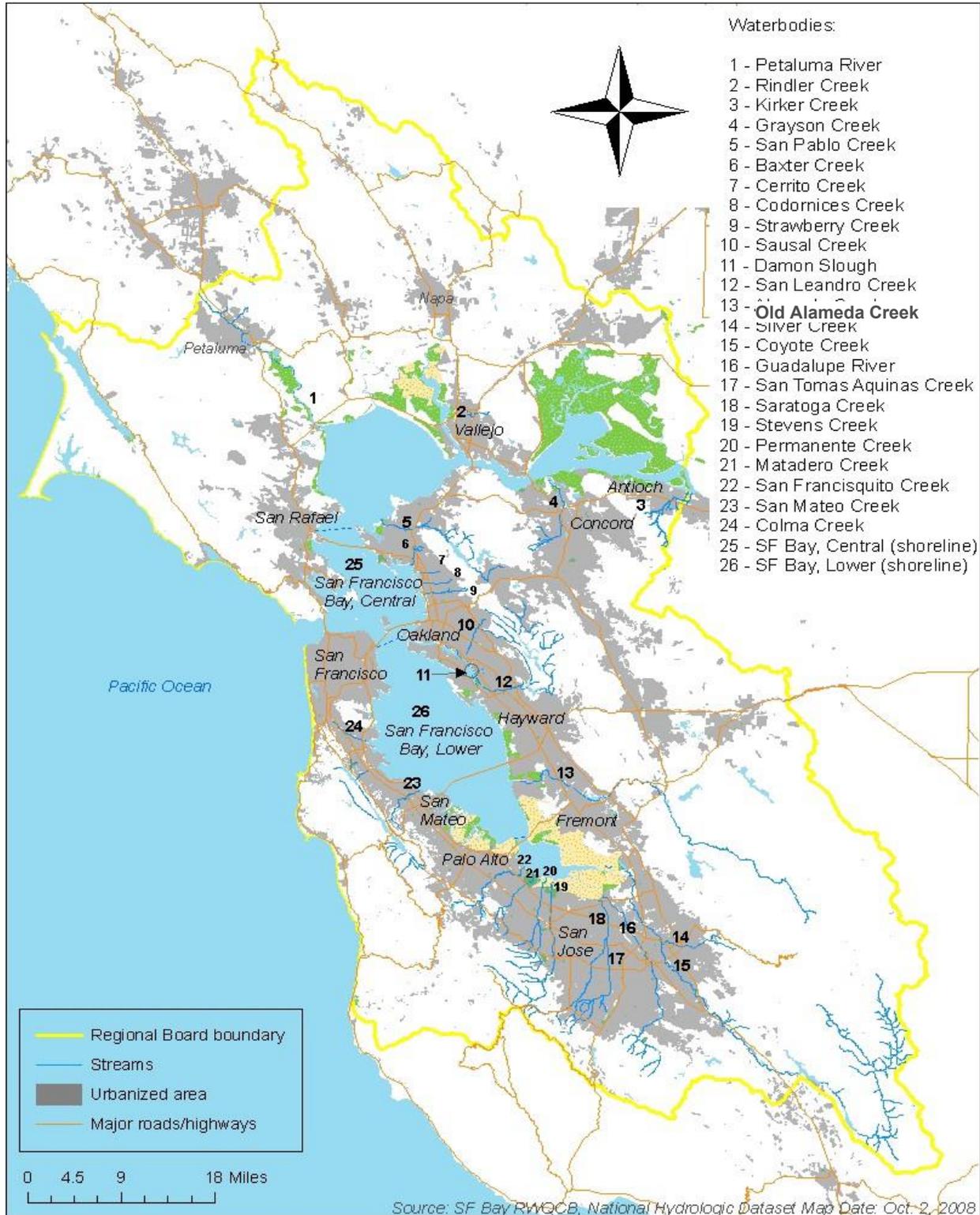


Figure 3: Proposed 2008 303(d) listings for trash

4.2 Proposed delisting and status change

Delist nickel in Sacramento San Joaquin Delta, San Pablo Bay, Suisun Bay

Based on the readily available data and information, there is strong justification for removing these water segment-pollutant combinations from the section 303(d) list in the Water Quality Limited Segments category. The Basin Plan contains nickel water quality objectives of 8.2µg/L as a 4-day average and 74µg/L as a 1-hour average. Data collected by the Regional Monitoring Program and Special Copper/Nickel study from 1993 through 2005 showed that none of the 59 analyzed water samples from the Sacramento San Joaquin Delta exceeded the water quality objectives, none of the 107 analyzed water samples from San Pablo Bay exceeded the water quality objectives, and none of the 96 analyzed water samples from Suisun Bay exceeded the objectives.

Change listing status: Castro Cove, Richmond (San Pablo Basin) - addressed by action other than TMDL

This water body was listed in 2006. Since that time a cleanup and abatement order (Order No. R2-2006-0078) requiring remediation of sediment contamination in the listed portion of Castro Cove was issued. The cleanup action involves removal of contaminated sediment and supports other abatement measures in place, such as the mercury TMDL approved by USEPA on February 12, 2008. Cleanup is underway and, upon its completion, it is expected that this water body will meet applicable water quality standards.

In November 2007, the Water Board received a Monitoring and Risk Management Plan that includes post-dredging confirmation monitoring to demonstrate that chemical contamination in the sediment has been reduced to levels that no longer pose unacceptable ecological risk. The cleanup completion is scheduled for 2010, and it is expected that this action will attain beneficial uses. Therefore, we recommend that Castro Cove be moved from the 303(d) list requiring a TMDL to the 303(d) list of water bodies being addressed by an action other than a TMDL.

4.3 TMDL schedule

All water body-pollutant combinations on the section 303(d) list are assigned with a proposed TMDL completion date. The maximum time that can elapse between 303(d) listing and TMDL completion is 13 years. Accordingly, we have assigned all new listings a TMDL completion date of 2021. This does not suggest that all new listings have the same priority, but rather that the factors determining TMDL priorities have not yet been evaluated as part of this listing process. These factors will be considered through our continuing planning process and with input from our Board and stakeholders. These factors include:

- Water body significance;
- Severity of pollution;
- Degree of impairment;

- Potential threat to human health and the environment;
- Water quality benefits of ongoing activities in the watershed;
- Potential for beneficial use protection and recovery;
- Degree of public concern;
- Availability of funding; and
- Availability of data and information to address the water quality problem.

4.4 Do-Not-List recommendations

This section presents two categories of water bodies for which a “do not list” decision was made. Table 5 lists good quality waters. For these waters there are sufficient data to determine that at least some beneficial uses are supported, and no data are available that suggest non-attainment of beneficial uses. Fact sheets for each of these recommendations are available online (Appendix C).

Table 5: Do Not List recommendations: Some beneficial uses supported

Water Body	Designated/Potential Uses	Supporting Data
Easkoot Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen
Pine Gulch Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen
Redwood Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen
Rodeo Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen
Tennessee Valley Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen
Webb Creek	Aquatic Life/ Cold Freshwater Habitat	Benthic macroinvertebrate bioassessment Temperature Dissolved Oxygen

Table 6 lists water body-pollutant combinations, for which there was insufficient information

to determine whether or not water quality standards are being attained. In some cases, there are a small number of water quality standard exceedances, but they are insufficient to demonstrate impairment in accordance with the Listing Policy. Thus, for these water body-pollutant combinations, more data should be collected to allow for a definitive determination in a subsequent listing cycle. The Fact Sheets for these water body-pollutant combinations, other than for trash assessment, are provided in Appendix C, online.

Table 6: Do Not List recommendations: Insufficient information to determine if beneficial uses are attained

Water Body	Designated/Potential Uses	Supporting Data
Arroyo Viejo Creek	Aquatic Life/ Warm Freshwater Habitat	Toxicity sediment Cr , Cu, As, Ni – sediment
Audubon Canyon Creek	Aquatic Life/ Cold Freshwater Habitat	Nitrate
Codornices Creek	Aquatic Life / Warm Freshwater Habitat	Dissolved oxygen
Glen Echo Creek	Aquatic Life/ Warm Freshwater Habitat	Toxicity sediment As, Cr, Cd, Cu, Pb, Hg, Ni – sediment Cu, Pb, Ni, Zn – water
Lion Creek	Aquatic Life/ Warm Freshwater Habitat	Dissolved oxygen
Lobos Creek	Aquatic Life/ Warm Freshwater Habitat	Toxicity water Toxicity sediment
Morses Gulch Creek	Aquatic Life/ Cold Freshwater Habitat	Nitrate
Mt Diablo Creek	Aquatic Life / Warm Freshwater Habitat	Dissolved oxygen Toxicity sediment
Peralta Creek	Aquatic Life / Warm Freshwater Habitat	Toxicity sediment Pyrethroids Diazinon
Permanente Creek	Aquatic Life / Cold Freshwater Habitat	Toxicity sediment
San Leandro Creek, Lower	Aquatic Life / Warm Freshwater Habitat	Chromium
Stevens Creek	Aquatic Life / Warm Freshwater Habitat	Dissolved oxygen
Temescal Creek	Aquatic Life/ Warm Freshwater Habitat	Toxicity water Cu, Pb, Ni, Zn – water
Walker Creek	Aquatic Life / Cold Freshwater Habitat	Temperature

4.5 Editorial revisions to the 2006 303(d) list

In addition to the proposed status changing actions, we reviewed and clarified the decision language for water bodies on the 303(d) list adopted in 2006. In particular, careful consideration was given to updating the expected schedules for TMDL completion. In addition, the updated list reflects U.S. EPA approval of TMDLs adopted since the 2006 303(d) list was approved. All of these revisions are editorial in nature and do not change the listing status of any water body. These revisions to the 2006 303(d) list of impaired water bodies are shown in Appendix C, online.

5 303(d)/305(b) Integrated Report

The 303(d)/305(b) Integrated Report will be prepared by State Board based on the information submitted in this report and similar information prepared by all the other Regions. The Integrated Report will then be submitted to the U.S. EPA. All of the assessments reflected in the Fact Sheets included in this report will be used to determine which category to assign to the evaluated water bodies. Additional Fact Sheets may be prepared for non-303(d) listed water bodies for inclusion in the Integrated Report.

The US EPA defines five non-overlapping categories for use in the integrated assessment (USEPA 2005). These categories include:

- Category 1: All designated uses are supported, no use is threatened;
- Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported (see Table 5 above);
- Category 3: There is insufficient available data and/or information to make a use support determination (see Table 6 above);
- Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed; and
- Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed (Table 4 above).

The 2008 Integrated Report adopted by State Board will include the 303(d) listing changes approved by each Regional Water Board. Categories 4 and 5 reflect those water bodies placed on the 303(d) list.

6 References

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APPENDIX A

PUBLIC SOLICITATION for Water Quality Information

available online at

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/303dlist.shtml

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APPENDIX B

SUMMARY OF DATA RECEIVED AND DATA QUALITY EVALUATION

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**Summary of Data Received
as a Result of Solicitation Process in February 2007**

REQUESTS TO LIST					
Water Body	Pollutant/ Water quality parameter	Data Source	Spatial Representation	Temporal Representation	Data Quality
Guadalupe River, Los Gatos Creek, Richmond Marsh, San Rafael Creek, Wildcat Creek, Stevens Creek	Trash	Save the Bay Photographic documentation and estimates of trash loads	1-4 locations on each water body	Data collected in January and February 2007	Medium – photographic documentation
Guadalupe River, Coyote Creek	Trash	GCRC D: Guadalupe-Coyote Resource Conservation District Photographic and narrative documentation of trash, debris, channel blockages, encampments and dumping	5 locations on Coyote Creek and 1 location on Guadalupe River	Data collected in March 2002, May 2005, and May 2006	Medium – photographic documentation
Bay area storm drain channels, creeks, wetlands and San Francisco Bay Damon Slough, Eastshore Park, Strawberry Creek, Temescal Creek, Adobe Creek, Alameda Creek, Alhambra Creek, Arroyo Seco, Coyote Creek, Richardson Bay shoreline, Aquatic Park Lagoon, Calabazas Creek, Colma Creek, Corte Madera Creek, Middle Harbor Park shoreline, Frontage Road Beach, Grayson Creek, Guadalupe River, Lafayette Creek, Lake Merritt,	Trash/Gross pollutants	Roger B. James & Lawrence P. Kolb Photographic and narrative documentation over a 10-year period	1-5 locations on each water body	Data collected mainly in winter months from 1997-2007, majority in 2006 and 2007	Medium – photographic documentation

REQUESTS TO LIST					
Water Body	Pollutant/ Water quality parameter	Data Source	Spatial Representation	Temporal Representation	Data Quality
Las Trampas Creek, Ledgewood Creek, Matadero Creek, McCoy Creek, Pacheco Slough, Rindler Creek, San Leandro Creek, San Mateo Creek, San Rafael Creek, San Pablo Creek, San Ramon Creek, San Tomas Aquino Creek, Sausal Creek, Stevens Creek, Sulphur Creek, Vista Grande Canal, Walnut Creek, 54 th Ave. Creek (tidal near Oakport)					
Rodeo Creek	Sediment	Muir Heritage Land Trust No quantitative data, geomorphic assessment and creek analysis <i>(Geomorphic and Hydrologic Assessment of Fernandez Ranch</i> prepared by Watershed Sciences	N/A	N/A	No data submitted
Willow Creek (tributary of Wildcat Creek near Saratoga)	Sediment	Margaret Giberson of Los Gatos	Willow Creek	1985-1991, 2002	Law – old (1985-1991, 2002) photographic documentation of sediment runoff
San Francisco Bay – areas adjacent to dredge material disposal sites	Suspended sediment	Fred Krieger of Berkeley Narrative evidence and references to USGS mapping, SFEI assessments of sediment loadings, RMP data and a White Paper on	San Francisco Bay	N/A	No data submitted

REQUESTS TO LIST					
Water Body	Pollutant/ Water quality parameter	Data Source	Spatial Representation	Temporal Representation	Data Quality
Abbotts Lagoon and associated tributaries in Point Reyes National Park	Biostimulatory substances, dissolved oxygen, un-ionized ammonia	Herring Fred Krieger of Berkeley Link to the USGS report http://pubs.usgs.gov/sir/2005/5261/sir_2005-5261.pdf <i>Assessment of Hydrologic and Water Quality Data Collected in Abbotts Lagoon Watershed, Point Reyes National Seashore, California, during Water Years 1999 and 2000</i>	Eleven monitoring locations including 3 locations in Abbotts Lagoon and 8 locations in unnamed tributaries draining into Abbotts Lagoon	Old data collected from November 1998 through August 1999. Quarterly sampling at the 3 lagoon sites and one perennial tributary and sampling of two storm events at several tributary sites	Old data. Medium quality – limited quality control procedures
Lake Chabot and its tributary Rindler Creek (Solano County)	Trash, dissolved oxygen, sediment	Friends of Lake Chabot Data not submitted, reference made to the data collected by the Vallejo Sanitation and Flood Control District	N/A	N/A	No data submitted
California Ocean Waters	Carbon dioxide	Center for Biological Diversity No data submitted. Scientific papers and supporting documentation on acidification of ocean waters	N/A	N/A	No numerical data submitted

REQUESTS NOT TO LIST / DE-LIST / OTHER					
Water Body	Pollutant/ Water quality parameter	Data Source	Spatial Representation	Temporal Representation	Data Quality
Urban Creeks – Santa Clara Basin Adobe Creek, Alamos Creek, Barron Creek, Berryessa Creek, Calabazas Creek, Coyote Creek, El Camino Storm Drain Channel, Guadalupe River, Los Gatos Creek, Silver Creek, Matadero Creek, Penitencia Creek, Permanente Creek, Randall Creek, Rodeo Creek, San Francisquito Creek, San Tomas Creek, Saratoga Creek, Stevens Creek, Thompson Creek	Trash and water quality data	SCVURPPP: Santa Clara Valley Urban Runoff Pollution Prevention Program Photographic and narrative documentation of creeks impacted by trash including additional physical, chemical and biological data	1-3 locations on each water body	Data collected 1 to 3 times per location from 2004 through 2006	High Quantitative Trash Assessment Methodology documented in separate report
Lake Merced	Dissolved oxygen, pH	San Francisco Public Utilities Commission Data submitted in support of not listing Lake Merced on the 303(d) list	Four monitoring locations in Lake Merced including 2 locations in South Lake Merced and 1 location in North and 1 in North East section of the lake.	DO and pH measured from 4 to 8 times a year over a period from 05/27/2004 to 12/20/2006	Quality control procedures unknown
Lake Del Valle Reservoir	Basic water quality, conventional chemistry, E. coli, Total coliform, Giardia and Cryptosporidium	Alameda Food Control and Water Conservation District Data submitted to document good quality of the drinking water supply. Request to modify the current 303(d) listing of the	Seven monitoring locations at 3 water bodies - including 3 locations at the Lake Del Valle and 4 locations at major inputs to the South Bay Aqueduct	Samples collected from December 2005 through March 2006	Description of the QA/QC protocols not included

REQUESTS NOT TO LIST / DE-LIST / OTHER					
Water Body	Pollutant/ Water quality parameter	Data Source	Spatial Representation	Temporal Representation	Data Quality
San Francisco Bay	Selenium	reservoir for Hg and PCBs to state that there is no threat to treated drinking water supply. Western State Petroleum Association Request to de-list Literature review and interpretation of selenium concentration data in San Francisco Bay and the likely toxicological effects of selenium.	N/A	N/A	RMP data available – high quality
Mount Diablo Creek	Temperature, dissolved oxygen, pH, conductivity, bacteria	Friends of Mount Diablo Creek Data provided for ongoing assessment of Mount Diablo Ck.	Six sampling locations (3 sites on the main stem of Mount Diablo Ck and 3 sites on the local tributaries)	Physico-chemical parameters measured monthly from March 2006 through February 2007. E coli and total coliforms measured at 3 sites in July and August 2006	QA/QC protocols included
N/A	Pesticides	DPR¹ : Department of Pesticide Regulation - links to the Surface Water Database containing pesticides data for California waterways. No specific data submitted.	Contra Costa, San Mateo, Solano and Santa Clara County,	Old data (1992-1998)	High

¹ The database comprises a limited amount of pesticide data (diazinon, chloropyrifos, diuron, metha diuron) collected more than 10 years ago from 12 creeks within Region 2 boundaries.

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APPENDIX C

WATER BODY FACT SHEETS

available online at

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/303dlist.shtml

ATTACHMENT F

**State Water Resources Control Board
Resolution No. 2012-0031, Attachment B
Special Protections for Areas of Biological Significance**

State Water Resources Control Board**Resolution No. 2012-0031****Attachment B - Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges****I. PROVISIONS FOR POINT SOURCE DISCHARGES OF STORM WATER AND NONPOINT SOURCE WASTE DISCHARGES**

The following terms, prohibitions, and special conditions (hereafter collectively referred to as special conditions) are established as limitations on point source storm water and nonpoint source discharges. These special conditions provide Special Protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS), as required for State Water Quality Protection Areas pursuant to California Public Resources Code Sections 36700(f) and 36710(f). These Special Protections are adopted by the State Water Board as part of the California Ocean Plan (Ocean Plan) General Exception.

The special conditions are organized by category of discharge. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) will determine categories and the means of regulation for those categories [e.g., Point Source Storm Water National Pollutant Discharge Elimination System (NPDES) or Nonpoint Source].

A. PERMITTED POINT SOURCE DISCHARGES OF STORM WATER**1. General Provisions for Permitted Point Source Discharges of Storm Water**

- a. Existing storm water discharges into an ASBS are allowed only under the following conditions:

(1) The discharges are authorized by an NPDES permit issued by the State Water Board or Regional Water Board;

(2) The discharges comply with all of the applicable terms, prohibitions, and special conditions contained in these Special Protections; and

(3) The discharges:

(i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;

(ii) Are designed to prevent soil erosion;

(iii) Occur only during wet weather;

(iv) Are composed of only storm water runoff.

- b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.
 - c. The discharge of trash is prohibited.
 - d. Only discharges from existing storm water outfalls are allowed. Any proposed or new storm water runoff discharge shall be routed to existing storm water discharge outfalls and shall not result in any new contribution of waste to an ASBS (i.e., no additional pollutant loading). "Existing storm water outfalls" are those that were constructed or under construction prior to January 1, 2005. "New contribution of waste" is defined as any addition of waste beyond what would have occurred as of January 1, 2005. A change to an existing storm water outfall, in terms of re-location or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
 - e. Non-storm water discharges are prohibited except as provided below:
 - (1) The term "non-storm water discharges" means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not composed entirely of storm water.
 - (2) (i) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:
 - (a) Discharges associated with emergency fire fighting operations.
 - (b) Foundation and footing drains.
 - (c) Water from crawl space or basement pumps.
 - (d) Hillside dewatering.
 - (e) Naturally occurring groundwater seepage via a storm drain.
 - (f) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
 - (ii) An NPDES permitting authority may authorize non-storm water discharges to an MS4 with a direct discharge to an ASBS only to the extent the NPDES permitting authority finds that the discharge does not alter natural ocean water quality in the ASBS.
 - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
2. Compliance Plans for Inclusion in Storm Water Management Plans (SWMP) and Storm Water Pollution Prevention Plans (SWPPP).

The discharger shall specifically address the prohibition of non-storm water runoff and the requirement to maintain natural water quality for storm water discharges to an ASBS in an

ASBS Compliance Plan to be included in its SWMP or a SWPPP, as appropriate to permit type. If a statewide permit includes a SWMP, then the discharger shall prepare a stand-alone compliance plan for ASBS discharges. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (for permits issued by Regional Water Boards).

- a. The Compliance Plan shall include a map of surface drainage of storm water runoff, showing areas of sheet runoff, prioritize discharges, and describe any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future. Priority discharges are those that pose the greatest water quality threat and which are identified to require installation of structural BMPs. The map shall also show the storm water conveyances in relation to other features such as service areas, sewage conveyances and treatment facilities, landslides, areas prone to erosion, and waste and hazardous material storage areas, if applicable. The SWMP or SWPPP shall also include a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.
- b. The ASBS Compliance Plan shall describe the measures by which all non-authorized non-storm water runoff (e.g., dry weather flows) has been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.
- c. For Municipal Separate Storm Sewer System (MS4s), the ASBS Compliance Plan shall require minimum inspection frequencies as follows:
 - (1) The minimum inspection frequency for construction sites shall be weekly during rainy season;
 - (2) The minimum inspection frequency for industrial facilities shall be monthly during the rainy season;
 - (3) The minimum inspection frequency for commercial facilities (e.g., restaurants) shall be twice during the rainy season; and
 - (4) Storm water outfall drains equal to or greater than 18 inches (457 mm) in diameter or width shall be inspected once prior to the beginning of the rainy season and once during the rainy season and maintained to remove trash and other anthropogenic debris.
- d. The ASBS Compliance Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that such installation would pose a threat to health or safety. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:
 - (1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

- (2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

- e. The ASBS Compliance Plan shall address erosion control and the prevention of anthropogenic sedimentation in ASBS. The natural habitat conditions in the ASBS shall not be altered as a result of anthropogenic sedimentation.
- f. The ASBS Compliance Plan shall describe the non-structural BMPs currently employed and planned in the future (including those for construction activities), and include an implementation schedule. The ASBS Compliance Plan shall include non-structural BMPs that address public education and outreach. Education and outreach efforts must adequately inform the public that direct discharges of pollutants from private property not entering an MS4 are prohibited. The ASBS Compliance Plan shall also describe the structural BMPs, including any low impact development (LID) measures, currently employed and planned for higher threat discharges and include an implementation schedule. To control storm water runoff discharges (at the end-of-pipe) during a design storm, permittees must first consider, and use where feasible, LID practices to infiltrate, use, or evapotranspire storm water runoff on-site, if LID practices would be the most effective at reducing pollutants from entering the ASBS.
- g. The BMPs and implementation schedule shall be designed to ensure that natural water quality conditions in the receiving water are achieved and maintained by either reducing flows from impervious surfaces or reducing pollutant loading, or some combination thereof.
- h. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results.
 - (1) The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents.
 - (2) The report shall describe BMPs that are currently being implemented, BMPs that are identified in the SWMP or SWPPP for future implementation, and any additional BMPs that may be added to the SWMP or SWPPP to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.
 - (3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits), the discharger shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised SWMP or SWPPP, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the discharger shall submit a draft written ASBS Compliance Plan to the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that describes its strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls (implementation schedule) to comply with these special conditions for inclusion in the discharger's SWMP or SWPPP, as appropriate to permit type. The final ASBS Compliance Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these special conditions shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.
- f. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe

the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. for municipalities, a demonstration of significant hardship to discharger ratepayers, by showing the relationship of storm water fees to annual household income for residents within the discharger's jurisdictional area, and the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for other governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

B. NONPOINT SOURCE DISCHARGES

1. General Provisions for Nonpoint Sources

- a. Existing nonpoint source waste discharges are allowed into an ASBS only under the following conditions:
 - (1) The discharges are authorized under waste discharge requirements, a conditional waiver of waste discharge requirements, or a conditional prohibition issued by the State Water Board or a Regional Water Board.
 - (2) The discharges are in compliance with the applicable terms, prohibitions, and special conditions contained in these Special Protections.
 - (3) The discharges:
 - (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (ii) Are designed to prevent soil erosion;
 - (iii) Occur only during wet weather;
 - (iv) Are composed of only storm water runoff.
- b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

- c. The discharge of trash is prohibited.
- d. Only existing nonpoint source waste discharges are allowed. "Existing nonpoint source waste discharges" are discharges that were ongoing prior to January 1, 2005. "New nonpoint source discharges" are defined as those that commenced on or after January 1, 2005. A change to an existing nonpoint source discharge, in terms of relocation or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
- e. Non-storm water discharges from nonpoint sources (those not subject to an NPDES Permit) are prohibited except as provided below:
 - (1) The term "non-storm water discharges" means any waste discharges that are not composed entirely of storm water.
 - (2) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability, or occur naturally:
 - (i) Discharges associated with emergency fire fighting operations.
 - (ii) Foundation and footing drains.
 - (iii) Water from crawl space or basement pumps.
 - (iv) Hillside dewatering.
 - (v) Naturally occurring groundwater seepage via a storm drain.
 - (vi) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
 - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
- f. At the San Clemente Island ASBS, discharges incidental to military training and research, development, test, and evaluation operations are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed in the two military closure areas in the vicinity of Wilson Cove and Castle Rock. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.
- g. At the San Nicolas Island and Begg Rock ASBS, discharges incidental to military research, development, testing, and evaluation of, and training with, guided missile and other weapons systems, fleet training exercises, small-scale amphibious warfare training, and special warfare training are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

h. All other nonpoint source discharges not specifically authorized above are prohibited.

2. Planning and Reporting

a. The nonpoint source discharger shall develop an ASBS Pollution Prevention Plan, including an implementation schedule, to address storm water runoff and any other nonpoint source discharges from its facilities. The ASBS Pollution Prevention Plan must be equivalent in contents to an ASBS Compliance Plan as described in I (A)(2) in this document. The ASBS Pollution Prevention Plan is subject to approval by the Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements).

b. The ASBS Pollution Prevention Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff that are necessary to comply with these special conditions, will be achieved through Management Measures and associated Management Practices (Management Measures/Practices). Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director or Regional Water Board Executive Officer that such installation would pose a threat to health or safety. Management Measures to control storm water runoff during a design storm shall achieve on average the following target levels:

(1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

(2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

c. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff or other nonpoint source pollution is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and the Regional Water Board within 30 days of receiving the results.

(1) The report shall identify the constituents that alter natural water quality and the sources of these constituents.

(2) The report shall describe Management Measures/Practices that are currently being implemented, Management Measures/Practices that are identified in the ASBS Pollution Prevention Plan for future implementation, and any additional Management Measures/Practices that may be added to the Pollution Prevention Plan to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the Management Measures/Practices.

(3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements), the discharger shall revise its ASBS Pollution Prevention Plan to incorporate any new or modified Management Measures/Practices that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised ASBS Pollution Prevention Plan, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the dischargers shall submit a draft written ASBS Pollution Prevention Plan to the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) that describes its strategy to comply with these special conditions, including the requirement to maintain natural ocean water quality in the affected ASBS. The Pollution Prevention Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls to comply with these special conditions for inclusion in the discharger's Pollution Prevention Plan. The final ASBS Pollution Prevention Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these Special Protections shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Pollution Prevention Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.

- f. The Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

II. ADDITIONAL REQUIREMENTS FOR PARKS AND RECREATION FACILITIES

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with parks and recreation facilities shall comply with the following:

- A. The discharger shall include a section in an ASBS Compliance Plan (for NPDES dischargers) or an ASBS Pollution Prevention Plan (for nonpoint source dischargers) to address storm water runoff from parks and recreation facilities.
 1. The plan shall identify all pollutant sources, including sediment sources, which may result in waste entering storm water runoff. Pollutant sources include, but are not limited to, roadside rest areas and vistas, picnic areas, campgrounds, trash receptacles, maintenance facilities, park personnel housing, portable toilets, leach fields, fuel tanks, roads, piers, and boat launch facilities.
 2. The plan shall describe BMPs or Management Measures/Practices that will be implemented to control soil erosion (both temporary and permanent erosion controls) and reduce or eliminate pollutants in storm water runoff in order to achieve and maintain natural water quality conditions in the affected ASBS. The plan shall include BMPs or

Management Measures/Practices to ensure that trails and culverts are maintained to prevent erosion and minimize waste discharges to ASBS.

3. The plan shall include BMPs or Management Measures/Practices to prevent the discharge of pesticides or other chemicals, including agricultural chemicals, in storm water runoff to the affected ASBS.
 4. The plan shall include BMPs or Management Measures/Practices that address public education and outreach. The goal of these BMPs or Management Measures/Practices is to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The BMPs or Management Measures/Practices shall include signage at camping, picnicking, beach and roadside parking areas, and visitor centers, or other appropriate measures, which notify the public of any applicable requirements of these Special Protections and identify the ASBS boundaries.
 5. The plan shall include BMPs or Management Measures/Practices that address the prohibition against the discharge of trash to ASBS. The BMPs or Management Measures/Practices shall include measures to ensure that adequate trash receptacles are available for public use at visitor facilities, including parking areas, and that the receptacles are adequately maintained to prevent trash discharges into the ASBS. Appropriate measures include covering trash receptacles to prevent trash from being wind blown and periodically emptying the receptacles to prevent overflows.
 6. The plan shall include BMPs or Management Measures/Practices to address runoff from parking areas and other developed features to ensure that the runoff does not alter natural water quality in the affected ASBS. BMPs or Management Measures/Practices shall include measures to reduce pollutant loading in runoff to the ASBS through installation of natural area buffers (LID), treatment, or other appropriate measures.
- B. Maintenance and repair of park and recreation facilities must not result in waste discharges to the ASBS. The practice of road oiling must be minimized or eliminated, and must not result in waste discharges to the ASBS.

III. ADDITIONAL REQUIREMENTS – WATERFRONT AND MARINE OPERATIONS

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with waterfront and marine operations shall comply with the following:

- A. For discharges related to waterfront and marine operations, the discharger shall develop a Waterfront and Marine Operations Management Plan (Waterfront Plan). This plan shall contain appropriate Management Measures/Practices to address nonpoint source pollutant discharges to the affected ASBS.
 1. The Waterfront Plan shall contain appropriate Management Measures/Practices for any waste discharges associated with the operation and maintenance of vessels, moorings, piers, launch ramps, and cleaning stations in order to ensure that beneficial uses are protected and natural water quality is maintained in the affected ASBS.

2. For discharges from marinas and recreational boating activities, the Waterfront Plan shall include appropriate Management Measures, described in The Plan for California's Nonpoint Source Pollution Control Program, for marinas and recreational boating, or equivalent practices, to ensure that nonpoint source pollutant discharges do not alter natural water quality in the affected ASBS.
 3. The Waterfront Plan shall include Management Practices to address public education and outreach to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The management practices shall include appropriate signage, or similar measures, to inform the public of the ASBS restrictions and to identify the ASBS boundaries.
 4. The Waterfront Plan shall include Management Practices to address the prohibition against trash discharges to ASBS. The Management Practices shall include the provision of adequate trash receptacles for marine recreation areas, including parking areas, launch ramps, and docks. The plan shall also include appropriate Management Practices to ensure that the receptacles are adequately maintained and secured in order to prevent trash discharges into the ASBS. Appropriate Management Practices include covering the trash receptacles to prevent trash from being windblown, staking or securing the trash receptacles so they don't tip over, and periodically emptying the receptacles to prevent overflow.
 5. The discharger shall submit its Waterfront Plan to the by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) within six months of the effective date of these special conditions. The Waterfront Plan is subject to approval by the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The plan must be fully implemented within 18 months of the effective date of the Exception.
- B. The discharge of chlorine, soaps, petroleum, other chemical contaminants, trash, fish offal, or human sewage to ASBS is prohibited. Sinks and fish cleaning stations are point source discharges of wastes and are prohibited from discharging into ASBS. Anthropogenic accumulations of discarded fouling organisms on the sea floor must be minimized.
 - C. Limited-term activities, such as the repair, renovation, or maintenance of waterfront facilities, including, but not limited to, piers, docks, moorings, and breakwaters, are authorized only in accordance with Chapter III.E.2 of the Ocean Plan.
 - D. If the discharger anticipates that the discharger will fail to fully implement the approved Waterfront Plan within the 18 month deadline, the discharger shall submit a technical report as soon as practicable to the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The technical report shall contain reasons for failing to meet the deadline and propose a revised schedule to fully implement the plan.
 - E. The State Water Board or the Regional Water Board may, for good cause, authorize additional time to comply with the Waterfront Plan. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in Section III.A.5. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality. The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration of significant hardship by showing that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

IV. MONITORING REQUIREMENTS

Monitoring is mandatory for all dischargers to assure compliance with the Ocean Plan. Monitoring requirements include both: (A) core discharge monitoring, and (B) ocean receiving water monitoring. The State and Regional Water Boards must approve sampling site locations and any adjustments to the monitoring programs. All ocean receiving water and reference area monitoring must be comparable with the Water Boards' Surface Water Ambient Monitoring Program (SWAMP).

Safety concerns: Sample locations and sampling periods must be determined considering safety issues. Sampling may be postponed upon notification to the State and Regional Water Boards if hazardous conditions prevail.

Analytical Chemistry Methods: All constituents must be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, must be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

A. CORE DISCHARGE MONITORING PROGRAM

1. General sampling requirements for timing and storm size:

Runoff must be collected during a storm event that is greater than 0.1 inch and generates runoff, and at least 72 hours from the previously measurable storm event. Runoff samples shall be collected during the same storm and at approximately the same time when post-

storm receiving water is sampled, and analyzed for the same constituents as receiving water and reference site samples (see section IV B) as described below.

2. Runoff flow measurements

- a. For municipal/industrial storm water outfalls in existence as of December 31, 2007, 18 inches (457mm) or greater in diameter/width (including multiple outfall pipes in combination having a width of 18 inches, runoff flows must be measured or calculated, using a method acceptable to and approved by the State and Regional Water Boards.
- b. This will be reported annually for each precipitation season to the State and Regional Water Boards.

3. Runoff samples – storm events

- a. For outfalls equal to or greater than 18 inches (0.46m) in diameter or width:
 - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
 - (2) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.
 - (3) If an applicant has no outfall greater than 36 inches, then storm water runoff from the applicant's largest outfall shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates).
- b. For outfalls equal to or greater than 36 inches (0.91m) in diameter or width:
 - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
 - (2) samples of storm water runoff shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates); and
 - (3) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.

- c. For an applicant not participating in a regional monitoring program [see below in Section IV (B)] in addition to (a.) and (b.) above, a minimum of the two largest outfalls or 20 percent of the larger outfalls, whichever is greater, shall be sampled (flow weighted composite samples) at least three times annually during wet weather (storm event) and analyzed for all Ocean Plan Table A constituents, Table B constituents for marine aquatic life protection (except for toxicity, only chronic toxicity for three species shall be required), DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, and Ocean Plan indicator bacteria. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one (the largest) such discharge shall be sampled annually in each Region.
4. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may reduce or suspend core monitoring once the storm runoff is fully characterized. This determination may be made at any point after the discharge is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

B. Ocean Receiving Water and Reference Area Monitoring Program

In addition to performing the Core Discharge Monitoring Program in Section II.A above, all applicants having authorized discharges must perform ocean receiving water monitoring. In order to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS, dischargers may choose either (1) an individual monitoring program, or (2) participation in a regional integrated monitoring program.

1. Individual Monitoring Program: The requirements listed below are for those dischargers who elect to perform an individual monitoring program to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within the affected ASBS. In addition to Core Discharge Monitoring, the following additional monitoring requirements shall be met:
 - a. Three times annually, during wet weather (storm events), the receiving water at the point of discharge from the outfalls described in section (IV)(A)(3)(c) above shall be sampled and analyzed for Ocean Plan Table A constituents, Table B constituents for marine aquatic life, DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, salinity, chronic toxicity (three species), and Ocean Plan indicator bacteria.

The sample location for the ocean receiving water shall be in the surf zone at the point of discharges; this must be at the same location where storm water runoff is sampled. Receiving water shall be sampled prior to (pre-storm) and during (or immediately after) the same storm (post storm). Post storm sampling shall be during the same storm and at approximately the same time as when the runoff is sampled. Reference water quality shall also be sampled three times annually and analyzed for the same constituents pre-storm and post-storm, during the same storm seasons when receiving water is sampled. Reference stations will be determined by the State Water Board's Division of Water Quality and the applicable Regional Water Board(s).

- b. Sediment sampling shall occur at least three times during every five (5) year period. The subtidal sediment (sand or finer, if present) at the discharge shall be sampled and analyzed for Ocean Plan Table B constituents for marine aquatic life, DDT, PCBs, PAHs,

pyrethroids, and OP pesticides. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed.

- c. A quantitative survey of intertidal benthic marine life shall be performed at the discharge and at a reference site. The survey shall be performed at least once every five (5) year period. The survey design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The results of the survey shall be completed and submitted to the State Water Board and Regional Water Board at least six months prior to the end of the permit cycle.
 - d. Once during each five (5) year period, a bioaccumulation study shall be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The study design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*). Based on the study results, the Regional Water Board and the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add or modify additional test organisms (such as shore crabs or fish), or modify the study design appropriate for the area and best available sensitive measures of contaminant exposure.
 - e. Marine Debris: Representative quantitative observations for trash by type and source shall be performed along the coast of the ASBS within the influence of the discharger's outfalls. The design, including locations and frequency, of the marine debris observations is subject to approval by the Regional Water Board and State Water Board's Division of Water Quality.
 - f. The monitoring requirements of the Individual Monitoring Program in this section are minimum requirements. After a minimum of one (1) year of continuous water quality monitoring of the discharges and ocean receiving waters, the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may require additional monitoring, or adjust, reduce or suspend receiving water and reference station monitoring. This determination may be made at any point after the discharge and receiving water is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.
2. Regional Integrated Monitoring Program: Dischargers may elect to participate in a regional integrated monitoring program, in lieu of an individual monitoring program, to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS. This regional approach shall characterize natural water quality, pre- and post-storm, in ocean reference areas near the mouths of identified open space watersheds and the effects of the discharges on natural water quality (physical, chemical, and toxicity) in the ASBS receiving waters, and should include benthic marine aquatic life and bioaccumulation components. The design of the ASBS stratum of a regional integrated monitoring program may deviate from the otherwise prescribed individual monitoring approach (in Section IV.B.1) if approved by the State Water Board's Division of Water Quality and the Regional Water Boards.
- a. Ocean reference areas shall be located at the drainages of flowing watersheds with minimal development (in no instance more than 10% development), and shall not be located in CWA Section 303(d) listed waterbodies or have tributaries that are 303(d)

listed. Reference areas shall be free of wastewater discharges and anthropogenic non-storm water runoff. A minimum of low threat storm runoff discharges (e.g. stream highway overpasses and campgrounds) may be allowed on a case-by-case basis. Reference areas shall be located in the same region as the ASBS receiving water monitoring occurs. The reference areas for each Region are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean reference water samples must be collected from each station, each from a separate storm during the same storm season that receiving water is sampled. A minimum of one reference location shall be sampled for each ASBS receiving water site sampled per responsible party. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.

- b. ASBS ocean receiving water must be sampled in the surf zone at the location where the runoff makes contact with ocean water (i.e. at "point zero"). Ocean receiving water stations must be representative of worst-case discharge conditions (i.e. co-located at a large drain greater than 36 inches, or if drains greater than 36 inches are not present in the ASBS then the largest drain greater than 18 inches.) Ocean receiving water stations are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean receiving water samples must be collected during each storm season from each station, each from a separate storm. A minimum of one receiving water location shall be sampled in each ASBS per responsible party in that ASBS. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
 - c. Reference and receiving water sampling shall commence during the first full storm season following the adoption of these special conditions, and post-storm samples shall be collected during the same storm event when storm water runoff is sampled. Sampling shall occur in a minimum of two storm seasons. For those ASBS dischargers that have already participated in the Southern California Bight 2008 ASBS regional monitoring effort, sampling may be limited to only one storm season.
 - d. Receiving water and reference samples shall be analyzed for the same constituents as storm water runoff samples. At a minimum, constituents to be sampled and analyzed in reference and discharge receiving waters must include oil and grease, total suspended solids, Ocean Plan Table B metals for protection of marine life, Ocean Plan PAHs, pyrethroids, OP pesticides, ammonia, nitrate, phosphates, and critical life stage chronic toxicity for three species. In addition, within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination shall be analyzed.
3. Waterfront and Marine Operations: In addition to the above requirements for ocean receiving water monitoring, additional monitoring must be performed for marinas and boat launch and pier facilities:
- a. For all marina or mooring field operators, in mooring fields with 10 or more occupied moorings, the ocean receiving water must be sampled for Ocean Plan indicator bacteria, residual chlorine, copper, zinc, grease and oil, methylene blue active substances (MBAS), and ammonia nitrogen.

- (1) For mooring field operators opting for an individual monitoring program (Section IV.B.1 above), this sampling must occur weekly (on the weekend) from May through October.
 - (2) For mooring field operators opting to participate in a regional integrated monitoring program (Section IV.B.2 above), this sampling must occur monthly from May through October on a high use weekend in each month. The Water Boards may allow a reduction in the frequency of sampling, through the regional monitoring program, after the first year of monitoring.
- b. For all mooring field operators, the subtidal sediment (sand or finer, if present) within mooring fields and below piers shall be sampled and analyzed for Ocean Plan Table B metals (for marine aquatic life beneficial use), acute toxicity, PAHs, and tributyltin. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed. This sampling shall occur at least three times during a five (5) year period. For mooring field operators opting to participate in a regional integrated monitoring program, the Water Boards may allow a reduction in the frequency of sampling after the first sampling effort's results are assessed.

Glossary

At the point of discharge(s) – Means in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero).

Areas of Special Biological Significance (ASBS) – Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

Design storm – For purposes of these Special Protections, a design storm is defined as the volume of runoff produced from one inch of precipitation per day or, if this definition is inconsistent with the discharger’s applicable storm water permit, then the design storm shall be the definition included in the discharger’s applicable storm water permit.

Development – Relevant to reference monitoring sites, means urban, industrial, agricultural, grazing, mining, and timber harvesting land uses.

Higher threat discharges - Permitted storm drains discharging equal to or greater than 18 inches, industrial storm drains, agricultural runoff discharged through an MS4, discharges associated with waterfront and marina operations (e.g., piers, launch ramps, mooring fields, and associated vessel support activities, except for passive discharges defined below), and direct discharges associated with commercial or industrial activities to ASBS.

Low Impact Development (LID) – A sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which entails collecting and conveying storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID focuses on using site design and storm water management to maintain the site’s pre-development runoff rates and volumes. The goal of LID is to mimic a site’s predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

Marine Operations – Marinas or mooring fields that contain slips or mooring locations for 10 or more vessels.

Management Measure (MM) - Economically achievable measures for the control of the addition of pollutants from various classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives. For example, in the “marinas and recreational boating” land-use category specified in the Plan for California’s Nonpoint Source Pollution Control Program (NPS Program Plan) (SWRCB, 1999), “boat cleaning and maintenance” is considered a MM or the source of a specific class or type of NPS pollution.

Management Practice (MP) - The practices (e.g., structural, non-structural, operational, or other alternatives) that can be used either individually or in combination to address a specific MM class or classes of NPS pollution. For example, for the “boat cleaning and maintenance” MM, specific MPs can include, but are not limited to, methods for the selection of environmentally sensitive hull paints or methods for cleaning/removal of hull copper anti-fouling paints.

Municipal Separate Storm Sewer System (MS4) – A municipally-owned storm sewer system regulated under the Phase I or Phase II storm water program implemented in compliance with Clean Water Act section 402(p). Note that an MS4 program’s boundaries are not necessarily congruent with the permittee’s political boundaries.

Natural Ocean Water Quality - The water quality (based on selected physical, chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, *i.e.*, an absence of significant amounts of: (a) man-made constituents (*e.g.*, DDT); (b) other chemical (*e.g.*, trace metals), physical (temperature/thermal pollution, sediment burial), and biological (*e.g.*, bacteria) constituents at concentrations that have been elevated due to man’s activities above those resulting from the naturally occurring processes that affect the area in question; and (c) non-indigenous biota (*e.g.*, invasive algal bloom species) that have been introduced either deliberately or accidentally by man. Discharges “*shall not alter natural ocean water quality*” as determined by a comparison to the range of constituent concentrations in reference areas agreed upon via the regional monitoring program(s). If monitoring information indicates that *natural ocean water quality* is not maintained, but there is sufficient evidence that a discharge is not contributing to the alteration of natural water quality, then the Regional Water Board may make that determination. In this case, sufficient information must include runoff sample data that has equal or lower concentrations for the range of constituents at the applicable reference area(s).

Nonpoint source – Nonpoint pollution sources generally are sources that do not meet the definition of a point source. Nonpoint source pollution typically results from land runoff, precipitation, atmospheric deposition, agricultural drainage, marine/boating operations or hydrologic modification. Nonpoint sources, for purposes of these Special Protections, include discharges that are not required to be regulated under an NPDES permit.

Non-storm water discharge – Any runoff that is not the result of a precipitation event. This is often referred to as “dry weather flow.”

Non-structural control – A Best Management Practice that involves operational, maintenance, regulatory (*e.g.*, ordinances) or educational activities designed to reduce or eliminate pollutants in runoff, and that are not structural controls (*i.e.* there are no physical structures involved).

Physical impossibility - Means any act of God, war, fire, earthquake, windstorm, flood or natural catastrophe; unexpected and unintended accidents not caused by discharger or its employees’ negligence; civil disturbance, vandalism, sabotage or terrorism; restraint by court order or public authority or agency; or action or non-action by, or inability to obtain the necessary authorizations or approvals from any governmental agency other than the permittee.

Representative sites and monitoring procedures – Are to be proposed by the discharger, with appropriate rationale, and subject to approval by Water Board staff.

Sheet-flow – Runoff that flows across land surfaces at a shallow depth relative to the cross-sectional width of the flow. These types of flow may or may not enter a storm drain system before discharge to receiving waters.

Storm Season – Also referred to as rainy season, means the months of the year from the onset of rainfall during autumn until the cessation of rainfall in the spring.

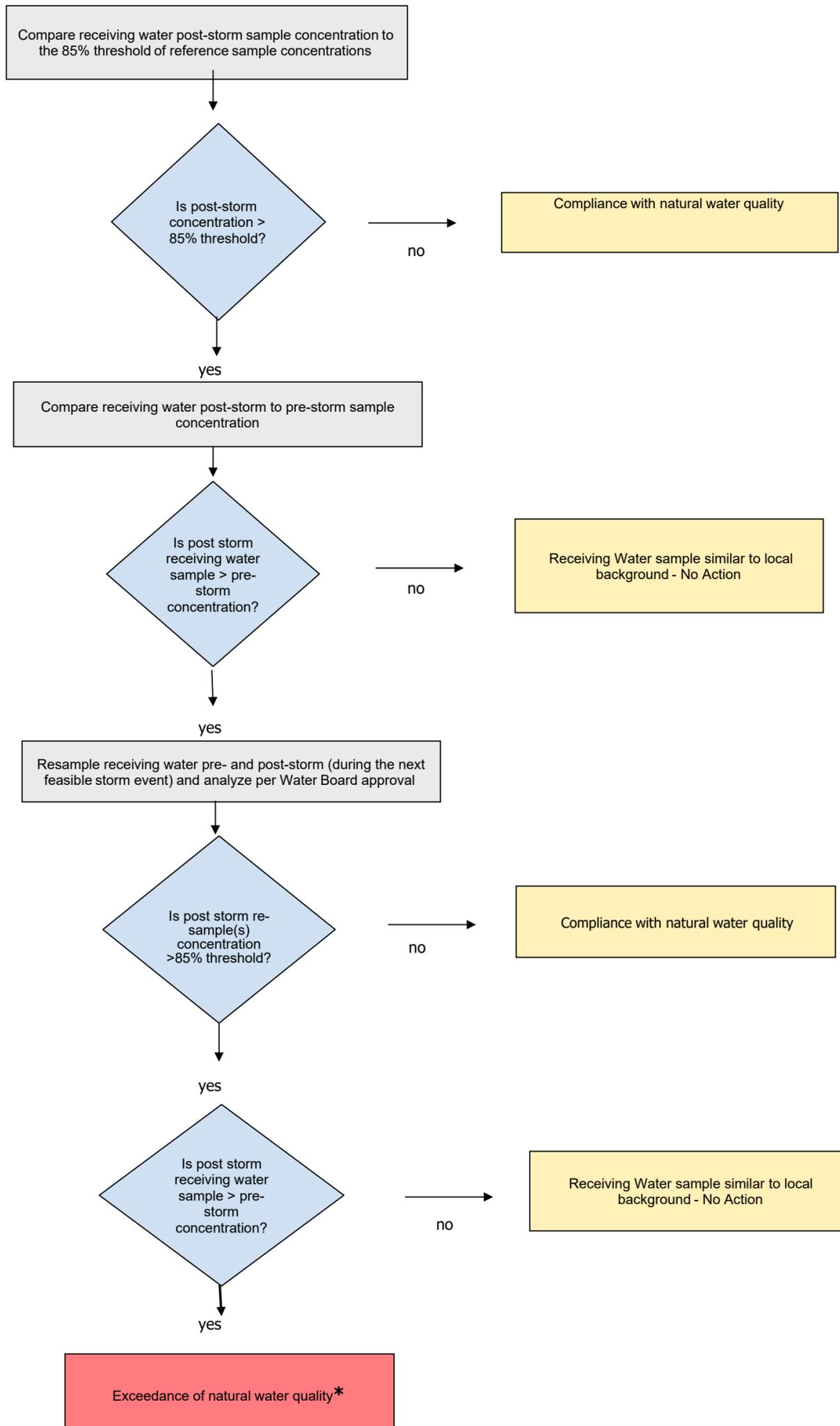
Structural control – A Best Management Practice that involves the installation of engineering solutions to the physical treatment or infiltration of runoff.

Surf Zone - The surf zone is defined as the submerged area between the breaking waves and the shoreline at any one time.

Surface Water Ambient Monitoring Program (SWAMP) comparable – Means that the monitoring program must 1) meet or exceed 2008 SWAMP Quality Assurance Program Management Plan (QAPP) Measurement Quality Objectives, or 2) have a Quality Assurance Project Plan that has been approved by SWAMP; in addition data must be formatted to match the database requirements of the SWAMP Information Management System. Adherence to the measurement quality objectives in the Southern California Bight 2008 ASBS Regional Monitoring Program QAPP and data base management comprises being SWAMP comparable.

Waterfront Operations - Piers, launch ramps, and cleaning stations in the water or on the adjacent shoreline.

**Attachment 1
Special Protections Sections I(A)(3)(e) and I(B)(3)(e)
Flowchart to Determine Compliance with natural Water Quality**



* When an exceedance of natural water quality occurs, the discharger must comply with section I.A.2.h (for permitted storm water) or section I.B.2.c (for nonpoint sources). Note, when sampling data is available, end-of-pipe effluent concentrations will be considered by the Water Boards in making this determination.

ATTACHMENT G

Standard NPDES Stormwater Permit Provisions

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**Standard Provisions and Reporting Requirements
for
NPDES Stormwater Discharge Permits**

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Permittees (hereinafter individually referred to as Discharger) must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); California Water Code, §§ 13261, 13263, 13265, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar

systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); California Water Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); California Water Code, § 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); California Water Code, § 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); California Water Code, § 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); California Water Code, § 13383.)

G. Bypass

1. Definitions

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss

caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. (40 C.F.R. § 122.41(m)(2).)
3. **Prohibition of bypass.** Bypass is prohibited, and the Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Water Board as required under Standard Provisions notice requirements. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Water Board may approve an anticipated bypass, after considering its adverse effects, if the Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance Part I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

H. Notice

- a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Water Board. As of December 21, 2020, all notices must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting Part V.J of this Attachment G. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)
- b. **Unanticipated bypass.** The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting Part V.E of this Attachment G (24-hour notice). The notice shall be sent to the Water Board. As of December 21, 2020, all notices must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting Part V.J of this Attachment G. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40

C.F.R. part 127.(40 C.F.R. § 122.41(m)(3)(ii).)

I. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance Part I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. §122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Water Board. The Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as maybe necessary under the CWA and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:
 - 1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
 - 2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order,

for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Water Board Executive Officer or U.S. EPA at any time. (40 C.F.R. § 122.41(j)(2); California Water Code § 13383(a))

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); California Water Code, § 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting Parts V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having

responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3)).

3. All reports required by this Order and other information requested by the Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting Part V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - e. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - f. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - g. The written authorization is submitted to the Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting Part V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting Part V.B.3 above must be submitted to the Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting Parts V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions – Parts V.B.1, V.B.2, or V.B.3 above that are submitted electronically shall meet all relevant requirements of this Standard Provisions – Reporting Part V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Water Board or State Water Board. As of December 21, 2020, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting Part V.J of this Attachment G and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is

expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting Part V.J of this Attachment G. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Water Board in this Order [40 CFR Section (l)(6)(ii)(C) and 122.44(g)].
3. The Water Board may waive the above-required written report under this provision on a case by case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting Parts V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting Part V.E above and the applicable required data in appendix A to 40 C.F.R. part 127. The Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.
- B.** The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any such Sections in a permit issued under Section 402, or any

requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the CWA is subject to a civil penalty not to exceed

\$25,000 per day for each violation. The CWA provides that any person who negligently violates Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the CWA, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more

than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such Sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than

\$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR Section 122.41(a)(2)] [California Water Code Sections 13385 and 13387].

- C. Any person may be assessed an administrative penalty by the Water Board for violating Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR Section 122.41(a)(3)].
- D. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be

maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both [40 CFR Section 122.41(j)(5)].

- E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR Section 122.41(k)(2)].

IV. CONTINUATION OF EXPIRED PERMIT

- A. This Order continues in force and effect until the effective date of a new permit or the Water Board rescinds this Order. (40 C.F.R. section 122.6(d).) Only those dischargers authorized to discharge under the expiring Order are covered by the continued Order.

ATTACHMENT H

Provision C.3.j.ii.(2)

Numeric Implementation Retrofit Requirements

Table H-1. Numeric Retrofit Requirements

County	Permittee	2019 US Census Bureau Population Estimate	MRP 3 Provision C.3.j Retrofit Assignment (acres)	County Total (acres)
Alameda	Alameda	77,624	4.66	58.42
Alameda	Alameda County	147,218	5.00	
Alameda	Albany	19,696	1.18	
Alameda	Berkeley	121,363	5.00	
Alameda	Dublin	64,826	3.89	
Alameda	Emeryville	12,086	0.73	
Alameda	Fremont	241,110	5.00	
Alameda	Hayward	159,203	5.00	
Alameda	Livermore	90,189	5.41	
Alameda	Newark	49,149	2.95	
Alameda	Oakland	433,031	5.00	
Alameda	Piedmont	11,135	0.67	
Alameda	Pleasanton	81,777	4.91	
Alameda	San Leandro	88,815	5.00	
Alameda	Union City	74,107	4.45	
Contra Costa	Antioch	111,502	5.00	57.32
Contra Costa	Brentwood	64,474	3.87	
Contra Costa	Clayton	12,265	0.74	
Contra Costa	Concord	129,295	5.00	

Contra Costa	Contra Costa County	185,589	5.00		
Contra Costa	Danville	44,510	2.67		
Contra Costa	El Cerrito	25,508	1.53		
Contra Costa	Hercules	26,276	1.58		
Contra Costa	Lafayette	26,638	1.60		
Contra Costa	Martinez	38,297	2.30		
Contra Costa	Moraga	17,783	1.07		
Contra Costa	Oakley	42,543	2.55		
Contra Costa	Orinda	19,926	1.20		
Contra Costa	Pinole	19,250	1.16		
Contra Costa	Pittsburg	72,588	4.36		
Contra Costa	Pleasant Hill	34,839	2.09		
Contra Costa	Richmond	110,567	5.00		
Contra Costa	San Pablo	30,990	1.86		
Contra Costa	San Ramon	75,995	4.56		
Contra Costa	Walnut Creek	70,166	4.21		
Santa Clara	Campbell	41,793	2.51		46.09
Santa Clara	Cupertino	59,276	3.56		
Santa Clara	Los Altos	30,089	1.81		
Santa Clara	Los Altos Hills	8,423	0.51		
Santa Clara	Los Gatos	30,222	1.81		
Santa Clara	Milpitas	84,196	5.00		

Santa Clara	Monte Sereno	3,427	0.21	43.31
Santa Clara	Mountain View	82,739	4.96	
Santa Clara	Palo Alto	65,364	3.92	
Santa Clara	San Jose	1,021,795	5.00	
Santa Clara	Santa Clara	130,365	5.00	
Santa Clara	Santa Clara County	98,110	5.00	
Santa Clara	Saratoga	30,153	1.81	
Santa Clara	Sunnyvale	152,703	5.00	
San Mateo	Atherton	7,137	0.43	
San Mateo	Belmont	26,941	1.62	
San Mateo	Brisbane	4,671	0.28	
San Mateo	Burlingame	30,889	1.85	
San Mateo	Colma	1,489	0.20	
San Mateo	Daly City	106,280	5.00	
San Mateo	East Palo Alto	29,314	1.76	
San Mateo	Foster City	33,901	2.03	
San Mateo	Half Moon Bay	12,932	0.78	
San Mateo	Hillsborough	11,387	0.68	
San Mateo	Menlo Park	34,698	2.08	
San Mateo	Millbrae	22,394	1.34	
San Mateo	Pacifica	38,546	2.31	
San Mateo	Portola Valley	4,568	0.27	

San Mateo	Redwood City	85,925	5.00	
San Mateo	San Bruno	42,807	2.57	
San Mateo	San Carlos	30,185	1.81	
San Mateo	San Mateo	104,430	5.00	
San Mateo	San Mateo County	64,832	3.89	
San Mateo	South San Francisco	67,789	4.07	
San Mateo	Woodside	5,458	0.33	
Solano	Fairfield	117,133	5.00	
Solano	Suisun City	29,663	1.78	
Solano	Vallejo	121,692	5.00	
Total		5,917,090.00	216.92	

Table H-1. The retrofit assignment is three acres per 50,000 population, prorated, with a minimum expectation of 0.20 acres and a maximum expectation of five acres. The population data in this table is from the 2019 U.S. Census Bureau Population Estimate.

ATTACHMENT I

**Applicable C.3 Requirements from
Previous Permit, Order No. R2-2015-0049**

C.3. New Development and Redevelopment

C.3.b. Regulated Projects

ii. Regulated Projects are defined in the following categories:

(1) Special Land Use Categories

- (a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:
 - (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
 - (ii) Retail gasoline outlets;
 - (iii) Restaurants (SIC Code 5812); or
 - (iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.
- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:
 - (i) Interior remodels; and
 - (ii) Routine maintenance or repair such as:
 - roof or exterior wall surface replacement, and/or
 - pavement resurfacing within the existing footprint.
- (c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50**

percent of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

Interior remodels; and

Routine maintenance or repair such as:

roof or exterior wall surface replacement, and/or

pavement resurfacing within the existing footprint.

(a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing

development that was not subject to Provision C.3., only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(4) Road Projects

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
 - (i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
 - (ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.
- (c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
 - Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.

- Bicycle lanes built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
- Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
- Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.¹
- Caltrans highway projects and associated facilities.

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.

ii. Special Projects

- (1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project’s drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

Tree-box-type high flowrate biofilters

Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures onsite;
 - (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the

¹ Permeable surfaces include pervious concrete, porous asphalt, unit pavers, and granular materials.

Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and

- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(3) Category A Special Project Criteria

- (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:

- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
- (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
- (iii) Create and/or replace one half acre or less of impervious surface area.
- (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
- (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

- (b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(4) Category B Special Project Criteria

- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is expressed in Floor Area Ratios (FARs²) for commercial development projects, in Dwelling Units per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.
- (i) 50% Maximum LID Treatment Reduction Credit
 - For any commercial Category B Special Project with an FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - For any residential Category B Special Project with a gross density³ of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the

² **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

³ **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.

two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

- For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(ii) 75% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(iii) 100% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to

100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

- (5) Category C Special Project Criteria (Transit-Oriented Development)
- (a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be characterized as a non-auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.
- (ii) If a commercial development project, achieve at least an FAR of 2:1.
- (iii) If a residential development project, achieve at least a gross density of 25 DU/Ac.
- (iv) If a mixed use development project, achieve at least an FAR of 2:1 or a gross density of 25 DU/Ac.
- (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.
- (c) Location Credits
- (i) A Category C Special Project may qualify for the following Location Credits:
- a. 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.
- b. 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.
- c. 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area

Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.

- (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
 - (iii) At least 50% or more of a Category C Special Project's site must be located within the $\frac{1}{4}$ or $\frac{1}{2}$ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
 - (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.
- (d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.
- (i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:
 - a. 10% Density Credit: Achieve an FAR of at least 2:1.
 - b. 20% Density Credit: Achieve an FAR of at least 4:1.
 - c. 30% Density Credit: Achieve an FAR of at least 6:1.
 - (ii) A Category C Special Project that is a residential or mixed-use development project may qualify for the following Density Credits:
 - a. 10% Density Credit: Achieve a gross density of at least 30 DU/Ac.
 - b. 20% Density Credit: Achieve a gross density of at least 60 DU/Ac.
 - c. 30% Density Credit: Achieve a gross density of at least 100 DU/Ac.

- (iii) Commercial Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR. Mixed use Category C Projects may use Density Credits based on either DU/Ac or FAR, but not both.
- (iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.
- (e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.
 - (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
 - a. 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.
 - b. 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.
- (6) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.).

iii. Implementation Level

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.
- (2) The definitions of FAR and gross density applicable to Provisions C.3.e.ii.(4) and (5) are effective July 1, 2022, and shall apply to all Special Projects granted final discretionary approval on or after July 1, 2022.

- (3) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

iv. Reporting – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

v. Reporting on Special Projects

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:

- (a) Submittal Date: Date that a planning application for the Special Project was submitted.
- (b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
- (c) Site Acreage: Total site area in acres.
- (d) Gross Density in DU/Ac: Number of dwelling units per acre.
- (e) Density in FAR: Floor Area Ratio.
- (f) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
- (g) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.
- (h) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
- (i) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

- i. **Task Description** – The Permittees shall require all development projects, which create and/or replace $\geq 2,500$ ft² to $< 10,000$ ft² of impervious surface, and detached single-family home projects,⁴ which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.

⁴ **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.¹
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.¹

This provision applies to all development projects that require approvals and/or permits issued under the Permittees' planning, building, or other comparable authority.

- ii. **Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

EXHIBIT 2
to Section 7

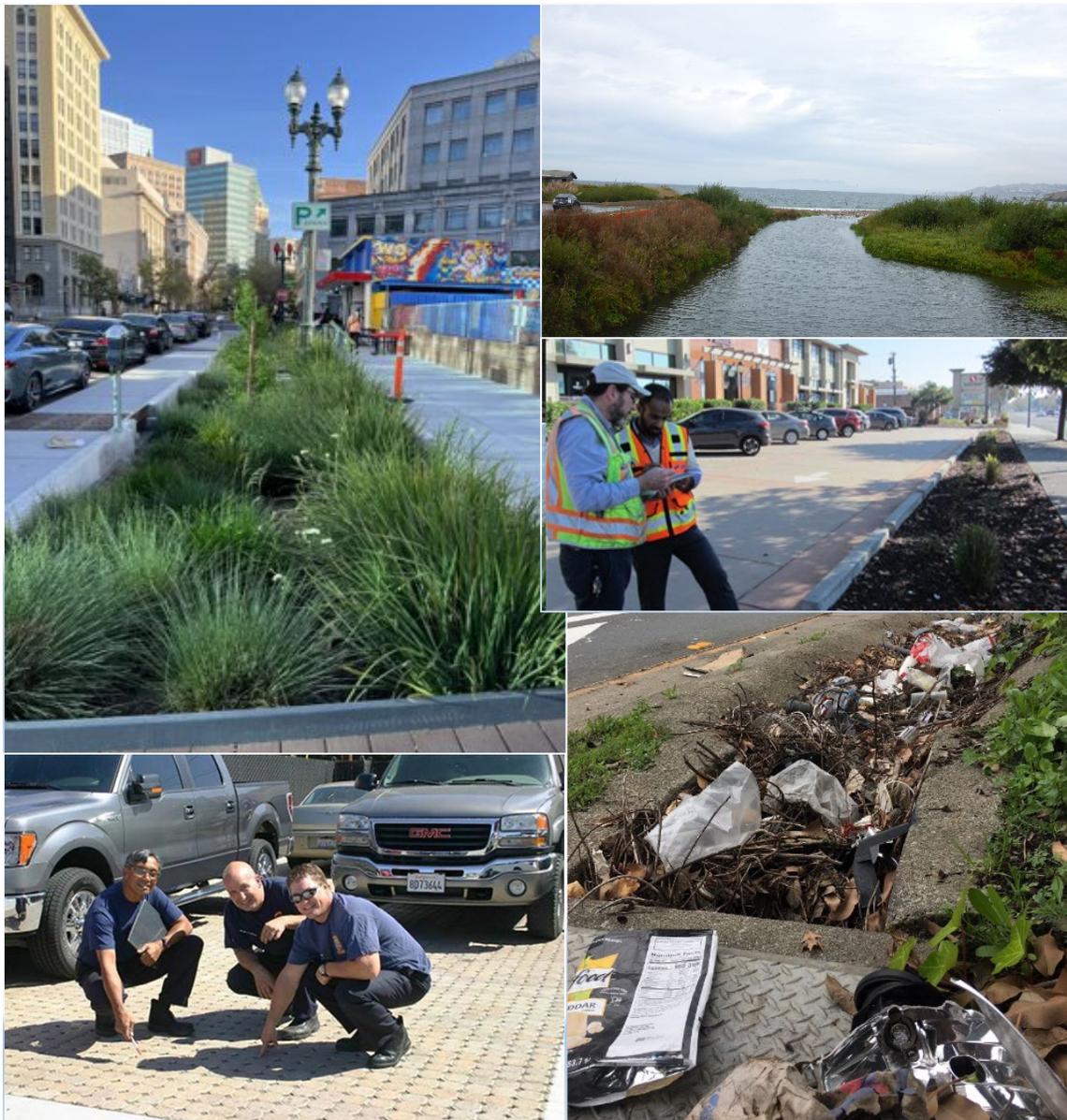
Important Note: The current permit, MRP 3, comprises Order Nos. R2-2022-0018 and R2-2023-0019. The following is an unofficial version of MRP 3 (without the Fact Sheet and other Attachments) that incorporates amendments to MRP 3 adopted in October 2023, and that has been compiled for convenience purposes only. Please refer to the adopted orders for a complete and accurate copy of MRP 3. In the event of a conflict between the adopted orders and this unofficial version of MRP 3, the adopted orders shall control.

**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

**Order No. R2-2022-0018, as amended by Order No. R2-
2023-0019**

NPDES Permit No. CAS612008

May 11, 2022



**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

ORDER No. R2-2022-0018, as amended by Order No. R2-2023-0019

NPDES PERMIT No. CAS612008

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood and Sea Level Rise Resiliency District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield, Suisun City, Vallejo, and the Vallejo Flood & Wastewater District, which have joined together to form the Solano Stormwater Alliance (Solano Permittees)

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Attachment H: Provision C.3.j. Numeric Retrofit Requirements and Provision C.3.e. Affordable Housing Income Thresholds	H-1

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Attachment A) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. The Fact Sheet, including any supplements thereto, is hereby incorporated by reference.

Existing Permit

2. **Alameda County**—The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 1, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
3. **Contra Costa County**—The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 1, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
4. **San Mateo County**—The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City,

San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood and Sea Level Rise Resiliency District, and San Mateo County have joined together to form the San Mateo Countywide Water Pollution Prevention Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 2, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County**—The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 2, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
6. **Fairfield-Suisun**—The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 3, 2020, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
7. **Vallejo**—The City of Vallejo and Vallejo Flood & Wastewater District (hereinafter referred to as the Vallejo Permittees) have submitted permit applications (Report of Waste Discharge), dated June 25 and June 29, 2020, respectively, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions. The Vallejo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2015-0049 on November 19, 2015, and amended by Order No. R2-2019-0004 on February 13, 2019, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
8. The cities of Fairfield, Suisun City, Vallejo, and the Vallejo Flood & Wastewater

District have joined together to form the Solano Stormwater Alliance (hereinafter referred to as the Solano Permittees). The Alameda, Contra Costa, San Mateo, Santa Clara, and Solano Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, U.S. EPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, U.S. EPA published an Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.
10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law, and U.S. EPA, where required.
11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, and selenium in San Francisco Bay segments; pesticide associated toxicity, and trash in urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.
12. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

13. Stormwater runoff is generated from various land uses in all the hydrologic sub-basins in the Basin and discharges into watercourses, which in turn flow into Central,

Lower and South San Francisco Bay, and Suisun and San Pablo Bays.

14. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not limited to, support for aquatic life; and other pollutants that can cause aquatic toxicity in the receiving waters.
15. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to U.S. EPA stormwater regulations.
16. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.
17. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.
18. The Water Board notified the Permittees and interested agencies and persons of its intent to adopt this Order and provided an opportunity to submit written comments and recommendations.
19. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

20. This Order supersedes and rescinds Order Nos. R2-2015-0049 as amended by R2-2019-0004.

21. This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective July 1, 2022, provided the Regional Administrator, U.S. EPA, Region 9, has no objections.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2015-0049, as amended by Order No. R2-2019-0004, is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Permittees shall comply with the following requirements in this Order. This action in no way prevents the Water Board from taking enforcement action for past violations of the previous order.

A. DISCHARGE PROHIBITIONS

- A.1.** The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.
- A.2.** It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. Permittees are also subject to the trash discharge prohibition in the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California and the Water Quality Control Plan for Ocean Waters of California.

B. RECEIVING WATER LIMITATIONS

- B.1.** The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
- B.1.a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
 - B.1.b.** Bottom deposits or aquatic growths;
 - B.1.c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - B.1.d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - B.1.e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.
- B.2.** The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are

adopted and approved by the State Water Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Waters Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.24. Compliance with Provisions C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f of this Order, which prescribe requirements and schedules for Permittees identified therein to manage their discharges that may cause or contribute to violations of water quality standards (WQS) for pesticides, trash, mercury, polychlorinated biphenyls (PCBs), bacteria, sediment, diazinon and chlorpyrifos, and methylmercury, shall constitute compliance during the term of this Order with Receiving Water Limitations B.1 and B.2 for the pollutants and the receiving waters identified in the provisions. Compliance with Provision C.10 which prescribes requirements and schedules for Permittees to manage their discharges of trash, shall also constitute compliance with Discharge Prohibitions A.1 and A.2 during the term of this Order for discharges of trash. If exceedance(s) of WQS, except for exceedances of WQS for pesticides, trash, mercury, PCBs, bacteria, sediment, diazinon and chlorpyrifos, and methylmercury that are managed pursuant to Provisions C.9 through C.12, C.14, C.18 (pertaining to the Pescadero-Butano Sediment TMDL), and C.19.c-f, persist in receiving waters notwithstanding the implementation of the required controls and actions, the Permittees shall comply with the following procedure:

- C.1.a.** Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable (WQS), the Permittee(s) shall notify, within no more than 30 days, and thereafter submit a report to the Water Board that describes controls or best management practices (BMPs) that are currently being implemented, and the current level of implementation, and additional controls or BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of water quality standards. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and
- C.1.b.** Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring

exceedances of the same receiving water limitations unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

i. Task Description – Asphalt/Concrete Removal, Cutting, Installation, and Repair

The Permittees shall implement appropriate BMPs, such as those described in the California Stormwater Quality Association (CASQA) Municipal Stormwater BMP Handbook and Construction Stormwater BMP Handbook, at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving, repair, or maintenance activities.

ii. Implementation Levels

- (1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if wastewater generated from road construction, repair, and maintenance activities may be discharged to the sanitary sewer system, provided appropriate approvals are obtained and pretreatment standards are met.
- (2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from work sites upon completion of work. The Permittees shall require cleanup of all construction debris, spills, and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association (BASMAA) Blueprint for a Clean Bay or the CASQA Municipal Stormwater BMP Handbook.

iii. Reporting

- (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
- (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

- i. Task Description** – The Permittees shall implement and require to be implemented BMPs that prevent the discharge of polluted wash water and non- stormwater to storm drains from pavement, sidewalk and plaza cleaning, mobile cleaning, outdoor pressure washing operations, and washing down of trash areas and gas station or mobile fueling service areas. BMPs for washing down outside areas of human habitation shall include sanitizing procedures. The Permittees shall implement BMPs such as those included in the BASMAA Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.
- ii. Reporting**
 - (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
 - (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

- i. Task Description**
 - (1) The Permittees shall implement appropriate BMPs to prevent the discharge of polluted stormwater and non-stormwater from bridges and structural maintenance activities directly into surface waters or storm drains.
 - (2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.
- ii. Implementation Levels**
 - (1) The Permittees shall prevent all debris and pollutants, including structural materials and coating debris, such as paint chips, generated in bridge and structure maintenance or graffiti removal, from entering storm drains or water courses.
 - (2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks, or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste, or wash water due to graffiti removal from entering storm drains or watercourses.

- (3) The Permittees shall use proper disposal methods for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts the proper capture and disposal methods for the wastes generated.

iii. Reporting

- (1) The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.
- (2) Permittees shall make applicable supporting BMP documents available to Water Board staff or representatives during audits or inspections, and upon request.

C.2.d. Stormwater Pump Stations

- i. Task Description** –The Permittees shall implement measures to operate, inspect, and maintain stormwater pump stations to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in stormwater discharges to comply with WQS.
- ii. Implementation Levels** – The Permittees shall comply with the following at Permittee-owned or -operated pump stations:
 - (1) Upon becoming aware that the discharge from a pump station has a dissolved oxygen (DO) concentration below 3.0 mg/L, implement corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 milligrams per liter (mg/L) and verify the effectiveness of the corrective actions with monitoring. Corrective actions are not necessary for discharges from pump stations that remain in the stormwater collection system or infiltrate into a dry creek immediately downstream.
 - (2) Ensure that pump stations are free of debris and trash, replace any oil-absorbent booms, as needed, and investigate and abate illicit discharges. Pump stations excluded from C.2.d.ii.(1) above are not excluded from this requirement.
 - (3) The Permittees shall maintain records of inspection, maintenance, implementation of corrective actions, and any monitoring records at Permittee-owned or -operated pump stations. These records shall be made available to Water Board staff or its representatives during inspections and audits, or otherwise upon request.

C.2.e. Rural Public Works Construction and Maintenance

i. Task Description – Rural Road and Public Works Construction and Maintenance

For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing, or open space uses. Rural roads include paved, unpaved, utility, and access roads in rural areas. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, such as those in the CASQA Construction Stormwater BMP Handbook, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

San Mateo County has additional rural road requirements for the Pescadero-Butano Sediment TMDL described in Provision C.18 and shall also implement that provision.

ii. Implementation Level

- (1) The Permittees shall continue to implement erosion and sediment control BMPs, in addition to those described in Provision C.2.a, during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities.
- (2) The Permittees shall implement appropriate BMPs to minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities by:
 - (a) Selecting road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;
 - (b) Identifying and prioritizing rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;
 - (c) Constructing roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;
 - (d) Implementing an inspection program to maintain rural roads' structural integrity and prevent impacts to water quality;

- (e) Maintaining rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion;
 - (f) Re-grading unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and
 - (g) Replacing existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner.
- (3) The Permittees shall incorporate information about the importance of planning and construction in avoiding water quality impacts into existing training and guidance on permitting requirements for rural public works activities.
 - (4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for rural public works construction and maintenance activities, including reporting on increased maintenance in priority areas, in the Annual Report.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

- (1) The Permittees shall implement and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle and heavy equipment maintenance yards and parking areas, and material storage facilities, to comply with water quality standards. Each SWPPP shall incorporate all appropriate BMPs, such as those described in the current versions of the CASQA Municipal Stormwater BMP Handbook or the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, and addenda, as applicable.
- (2) The requirements in this provision shall apply only to facilities that are not covered under the State Water Board’s Industrial Stormwater NPDES General Permit.

ii. Implementation Level

- (1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters from street sweepers, vactor trucks, or other related equipment. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.
- (2) Routinely inspect corporation yards to ensure that non-stormwater discharges are not entering the storm drain system and that pollutant discharges are prevented to the maximum extent practicable. At a minimum, each corporation yard shall be fully inspected each year between August 1 and September 30. Permittees shall cease or cause to be ceased any active non-stormwater discharges immediately after they are discovered. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded.
- (3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency. In areas where a sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to an alternative sanitary sewer connection or municipal wastewater treatment plant, or implement appropriate BMPs to collect, properly treat, and reuse wash water onsite without any discharge.
- (4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where a sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.

- (5) Outdoor storage areas containing pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. Reporting

- (1) In each Annual Report, Permittees shall list activities conducted in the corporation yards that have BMPs in the site-specific SWPPP, the date(s) of inspections, the results of inspections, and any follow-up actions, including the date of any necessary corrective actions implemented. The information may be reported in a narrative or tabular format.
- (2) In the 2023 Annual Report, Permittees shall make their corporation yard SWPPPs available to the Water Board by providing links to online documents or submitting the documents as part of the Annual Report.

C.2.g. Storm Drain Inlet Marking

- i. Task Description** – Permittees shall mark and maintain municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. For newly approved, privately maintained streets, Permittees shall require storm drain inlet markings with an appropriate stormwater pollution prevention message by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings on the storm drain inlets shall be verified prior to acceptance of the project.

ii. Implementation Level

- (1) Inspect and maintain storm drain inlet markings of at least 80 percent of municipality-maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.
- (2) Storm drain inlet markings of newly developed, privately maintained streets shall be verified prior to acceptance of the project. Permittees shall require maintenance of the storm drain inlet markings through the development maintenance entity.
- (3) Certify that all privately maintained streets had storm drain inlet markings verified prior to acceptance of the project and were required to maintain the storm drain inlet markings through the development maintenance entity.

- iii. **Reporting** – In the 2026 Annual Report, each Permittee shall (1) state how many municipally-maintained storm drain inlets it has, (2) certify that at least 80 percent of municipality-maintained storm drain inlet markings are legibly labeled with an appropriate stormwater pollution prevention message during the permit term; and (3) include a picture of a labeled municipality-maintained inlet.

C.2.h. **Staff Training**

- i. **Task Description** – Permittees shall ensure municipal maintenance staff conducting routine repair and maintenance activities of municipal facilities and infrastructure, or activities related to the implementation of corporation yard SWPPPs, are appropriately trained on the requirements of Provision C.2 and methods of implementation. Trainings may be program-wide, region-wide, or Permittee-specific.
- ii. **Implementation Level** – At a minimum, provide training at least once within the 5-year term of this Permit to municipal staff on the following topics as relevant to municipal staff responsible for maintenance activities:
 - (1) Stormwater pollution prevention;
 - (2) Appropriate BMPs for maintenance and cleanup activities;
 - (3) Street and Road Repair and Maintenance BMPs;
 - (4) Sidewalk/Plaza Maintenance and Pavement Washing;
 - (5) Bridge and Structure Maintenance and Graffiti Removal;
 - (6) Corporation Yard SWPPPs and BMPs; and
 - (7) Spill and discharge response and notification procedures and contacts.
- iii. **Reporting** – The Permittees shall include the following information in each Annual Report:
 - (1) Dates of training;
 - (2) Training topics covered;
 - (3) Total number of Permittee maintenance staff;
 - (4) Number and percentage of Permittee maintenance staff who attended training;
 - (5) If there was no training in a given year, so state.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and significant redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

- i. Task Description** – At a minimum, each Permittee shall:
- (1) Have adequate legal authority to implement all requirements of Provision C.3;
 - (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
 - (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
 - (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
 - (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
 - (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; and protection and/or restoration of riparian areas and wetlands as project amenities;
 - (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable

review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:

- Storm drain inlet stenciling.
- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as ReScape California.
- Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
- Covered trash, food waste, and compactor enclosures.
- Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
 - Dumpster drips from covered trash and food compactor enclosures.
 - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.

(8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the ReScape California Guidelines).

ii. **Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1) - (8) in the 2023 Annual Report.

C.3.b. Regulated Projects

i. **Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii. below (hereinafter called Regulated Projects) to implement LID source control, site design, and

stormwater treatment onsite or at a joint stormwater treatment facility¹ in accordance with Provisions C.3.c. and C.3.d., unless the Provision C.3.e. alternate compliance options are invoked. For Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

- (1) Any Regulated Project that has been approved with stormwater treatment measures in compliance with Provision C.3.d. under a previous MS4 permit is exempt from the requirements of Provision C.3.c. (low impact development requirements).
- (2) Any Regulated Project that was approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that has not begun construction by the effective date of this Permit, shall be required to fully comply with the requirements of Provisions C.3.c. and C.3.d. Permittees may grant exemptions from this requirement as follows:
 - (a) An exemption may be granted to:
 - (i) Any Regulated Project that was previously approved with a vesting tentative map that confers a vested right to proceed with development in substantial compliance with the ordinances, policies, and standards in effect at the time the vesting tentative map was approved or conditionally approved, as allowed by State law.
 - (ii) Any Regulated Project for which the Permittee has no legal authority to require changes to previously granted approvals, such as projects that have been granted building permits.
 - (b) An exemption from the LID requirements of Provision C.3.c. may be granted to any such Regulated Project as long as stormwater treatment with media filters is provided that comply with the hydraulic sizing requirements of Provision C.3.d.
- (3) Any pending Regulated Project that has not yet been approved as of June 30, 2023, and for which a Permittee has no legal authority to require new requirements under Government Code sections 66474.2 or 65589.5., subd. (o), is subject to the Provision C.3 requirements in effect on the Permit's effective date.

¹ **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects.

ii. Regulated Projects are defined in the following categories:

(1) Special Land Use Categories

- (a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee, including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the project:²
- (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
 - (ii) Retail gasoline outlets;
 - (iii) Restaurants (SIC Code 5812); or
 - (iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.
- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv):
- (i) The following interior and exterior practices are excluded:
 - a. Interior remodels; and
 - b. Routine maintenance or repair such as roof or exterior wall surface replacement.
 - (ii) The following pavement maintenance practices are excluded;
 - a. Pothole and square cut patching;
 - b. Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage;

² This does not include separate additional portions of the public right of way that Permittees require treatment of, which the Regulated Project is not disturbing. This is typically enforced through local ordinance, such as what is described in Provision C.3.j.ii.(2)(j).

- c. Shoulder grading;
 - d. Reshaping/regrading drainage systems;
 - e. Crack sealing;
 - f. Pavement preservation activities that do not expand the road prism;
 - g. Upgrading from a bituminous surface treatment (e.g., chip seal)³ with an overlay of asphalt or concrete, without expanding the area of coverage;⁴
 - h. Applying a bituminous surface treatment to existing asphalt or concrete pavement, without expanding the area of coverage; and
 - i. Vegetation maintenance.
 - j. Layering gravel over an existing gravel road, without expanding the area of coverage.
- (iii) The following pavement maintenance practices are not excluded. For Road Reconstruction Projects, these practices are included only if they trigger all criteria specified in Provision C.3.b.ii.(5), including the criteria regarding contiguousness.
- a. Removing and replacing an asphalt or concrete pavement to the top of the base course⁵ or lower, or repairing the pavement base (including repair of the pavement base in preparation for bituminous surface treatment, such as chip seal), as these are considered replaced impervious surfaces;
 - b. Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders, as these are considered new impervious surfaces; and
 - c. Resurfacing by upgrading from dirt to gravel, to a bituminous surface treatment (e.g., chip seal),³ to asphalt, or to concrete; or upgrading from gravel to a bituminous surface treatment, to asphalt, or to concrete, as these are considered new impervious surfaces.

³ This is defined further in the Glossary

⁴ This includes wedge grinding that is implemented as part of the upgrade project, so long as the area of coverage is not expanded. See definition of wedge grinding in Glossary.

⁵ See definition in Glossary.

- (iv) For a project consisting of a combination of exempted pavement maintenance practices (pursuant to Provision C.3.b.ii.(1)(b)(ii)), non-exempted pavement maintenance practices (pursuant to Provision C.3.b.ii.(1)(b)(iii)), and/or practices that fall under any other Regulated Project category (pursuant to Provision C.3.b.ii.(1)-(6)), the parts of the project that are not exempt shall be evaluated as a Regulated Project.
- (c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).
- (e) The calculations in Provision C.3.b.ii.(1)(c)-(d) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.

(2) Other Development Projects

New development projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects (other than public road projects), including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the projects.² This category includes development projects on public or private land that fall under the planning and building authority of a Permittee.

(3) Other Redevelopment Projects

Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, new and reconstructed private roads and private trails, and public projects (other than public road and trail projects),⁶ including sidewalks and any other portions of the public right of way that are developed or redeveloped as part of the projects.² Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions that apply to this category are listed in Provision C.3.b.ii.(1)(b). Public works projects that are additionally excluded from this category – unless they create and/or replace 5,000 contiguous⁸ square feet or more of impervious surface – include the following examples: sidewalk gap closures,⁷ sidewalk section replacement, and ADA curb ramps. However, as noted above, portions of the public right of way that are developed or redeveloped as part of Regulated Projects (e.g., curb extensions, pavement replacement, and curb and gutter replacement) shall be included in the total created and/or replaced impervious surface that must be treated by those Regulated Projects.

- (a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in

⁶ Examples of such public projects are construction/reconstruction of: streetlights, signals, and signs; curb extensions, sidewalks, and medians; crosswalk enhancements, bulb-outs, curb ramps, and ADA improvements; and sidewalk extensions.

⁷ The filling of gaps between sections of sidewalks, with pavement (e.g., where a block has a sidewalk, but it is not continuous because it is missing across a parcel, completing the sidewalk across that parcel).

the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

- (c) The calculations in Provision C.3.b.ii.(3)(a)-(b) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.

(4) New or Widening Road Projects

Any of the following types of road projects that create 5,000 square feet or more of newly constructed contiguous⁸ impervious surface, that are both public and private road projects, and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
 - (i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
 - (ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

⁸ Project areas interrupted by cross streets or intersections are considered contiguous.

- (c) Construction of impervious⁹ trails that are greater than or equal to 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
 - (i) Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
 - (ii) Bicycle lanes built as part of new streets or roads, but that are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
 - (iii) Impervious trails that direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees, where those areas are at least half as large as the contributing impervious surface area.
 - (iv) Sidewalks, bicycle lanes, or trails constructed as pervious pavement systems.¹⁰
 - (v) Caltrans highway projects and associated facilities.

(5) Road Reconstruction Projects

Road projects that involve the reconstruction of existing streets or roads,¹¹ which create and/or replace greater than or equal to one contiguous⁸ acre of impervious surface and that are public road projects and/or fall under the building and planning authority of a Permittee, including sidewalks and bicycle lanes that are built or rebuilt as part of the existing streets or roads. This Regulated Project category includes utility trenching projects which are - on average, over the entire length of the project - greater than or equal to 8 feet wide. It also includes public pavement maintenance practices listed in Provision C.3.b.ii.(1)(b)(iii)(b).

Project activities that are included and excluded, which apply to this category, are listed in Provision C.3.b.ii.(1)(b)(ii)-(iv). Pavement maintenance practices that are not excluded (as detailed in Provision C.3.b.ii.(1)(b)(iii)) are considered Road Reconstruction Projects if they meet the other definitions therein.

⁹ Gravel layers are considered impervious, excluding gravel layers that are included in pervious pavement systems (as defined in the Glossary).

¹⁰ As defined in the Glossary.

¹¹ The definition of roads includes roads on levees.

- (a) Where the reconstruction project results in an alteration of greater than or equal to 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that was reconstructed).
- (b) Where the reconstruction project results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new and/or replaced impervious surface within the project footprint). However, if the stormwater runoff from the existing impervious surface and the added impervious surface cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added impervious surface.
- (c) Road Reconstruction Projects shall comply with Provision C.3.d. However, with cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the Provision C.3.j.i.(2)(g) approach outlined in the Previous Permit, significant amounts of run-on from adjacent areas, or other substantial constraints identified by Permittees) and with reporting in their Annual Reports, Permittees may use the Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis Green Infrastructure Facility Sizing for Non-Regulated Street Projects submitted in June 2019, to size Road Reconstruction Projects. If so, Permittees must comply with the Water Board's June 21, 2019, conditional approval of that submittal, which provides qualifiers to, and the conditions under which, the alternative sizing criteria may be used.
- (d) Permittees may credit the acreage of impervious surface created or replaced for Road Reconstruction Projects towards the Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2).

(6) Large Detached Single-Family Home Projects

Detached single-family home projects that create and/or replace 10,000 ft² or more of impervious surface (collectively over the entire project site) and are not part of a larger development or redevelopment plan regulated under Provision C.3.b.ii.(2)-(3).

- (a) Where a single family home project results in an alteration of **50 percent or more** of the impervious surface of a previously existing project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire project).
- (b) Where a single family home project results in an alteration of **less than 50 percent** of the impervious surface of a previously existing project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).
- (c) The calculations in Provision C.3.b.ii.(6)(a)-(b) shall include portions of the public right of way that are developed or redeveloped as part of the Regulated Project.
- (d) Included in this Regulated Project category is the addition of an accessory dwelling unit (ADU) on an existing parcel with one single-family home, without a subdivision.

iii. Implementation Level

- (1) Provision C.3.b.i shall be effective immediately.
- (2) Beginning July 1, 2023, the Regulated Project definitions in Provision C.3.b.ii are effective.
- (3) Prior to July 1, 2023, the Regulated Project definitions in Provision C.3.b.ii in Attachment I are effective, which are definitions from the Previous Permit.
- (4) For Provisions C.3.b.iii.(1)-(3), this shall include a database or equivalent tabular format that contains all the information under Reporting (Provision C.3.b.iv.).

iv. Reporting

(1) C.3.b.i.(2) Reporting

In the 2023 Annual Report, each Permittee shall provide a complete list of the development projects that are subject to the requirements of Provision C.3.b.i.(2). For each such project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). If a Permittee has no projects subject to Provision C.3.b.i.(2), it shall so state in the 2023 Annual Report.

(2) Annual Reporting – C.3.b.ii. Regulated Projects

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the fiscal year Annual Report, in tabular form (as set forth in the Provision C.3.b. Sample Reporting Table included in Attachment B):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;
- (e) Total new impervious surface area and/or total replaced impervious surface area;
- (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
- (g) Status of project (e.g., application date, application deemed complete date, project approval date), and whether the project has been completed. If not, the estimated project completion date;
- (h) Source control measures;
- (i) Site design measures;
- (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
- (k) Operation and maintenance responsibility mechanism for the life of the project;
- (l) Hydraulic Sizing Criteria used;

- (m) Alternative compliance measures for Regulated Project (if applicable)
 - (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.iv.(2)(a) – (l) for the offsite project; and
 - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.iv.(2)(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and
- (n) Hydromodification (HM) Controls (see Provision C.3.g) – If not required, state why not. If required, state control method used.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

- i. **Task Description** – The Permittees shall, at a minimum, implement the following LID requirements:
 - (1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that, at a minimum, shall include the following:

 - (a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
 - Dumpster drips from covered trash, food waste, and compactor enclosures;

- Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;
- (b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;
- (c) Properly designed trash storage areas;
- (d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;
- (e) Efficient irrigation systems; and
- (f) Storm drain system stenciling or signage.
- (2) Site Design and Stormwater Treatment Requirements
- (a) Require each Regulated Project to implement at least the following design strategies onsite:
- (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
 - (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
 - (iii) Minimize impervious surfaces;
 - (iv) Minimize disturbances to natural drainages; and
 - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.

- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with pervious pavement systems.¹²
 - Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.
- (b) Permittees shall implement the design specifications for pervious pavement systems contained within their countywide stormwater handbooks.
- (c) Require each Regulated Project and all projects implemented pursuant to Provision C.3.j to treat 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's or Provision C.3.j project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
- (i) LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment.
 - (ii) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in the Revised Model Biotreatment Soil Media Specifications submitted by BASMAA on behalf of the Permittees on February 5, 2016, and approved on April 18, 2016, pursuant to the requirements of Provision C.3.c.i.(2)(c)(ii) of MRP 2. Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.
 - a. The Permittees may convene a workgroup with Water Board staff to discuss and investigate the pollutant removal

¹² Pervious pavement systems include pervious asphalt, pervious concrete, pervious pavers, and grid pavers, and are defined in the Glossary.

effectiveness and hydrologic equivalency of – and suggested criteria for – high flow-rate media treatment systems in combination with retention/detention measures, such as silva cells and structural soils, as compared to conventional bioretention. The workgroup should consider issues including: the MEP standard in relation to the use of such systems; the pollutant removal benefits and hydrologic criteria associated with the Permit's LID design approach and which are included in other MS4 permits, such as the Western Washington Phase II Municipal Stormwater Permit (NPDES Permit No. WAR045717) and the Los Angeles Regional MS4 Permit (NPDES Permit No. CAS004004); and additional issues, such as the feasibility of obtaining high flow rate media at construction and, as needed, for the life of a project.

(iii) Alternative Treatment Systems

Permittees may allow a Regulated Project to comply with the Provision C.3.d design volume and/or flow requirement for the approved portion (Approved Portion)¹³ using an alternative treatment system (i.e., onsite non-LID treatment systems (e.g., media filters) in combination with systems providing flow control benefit), as follows:

- a. Alternative treatment systems may be implemented in the following two geographic areas, as identified in a Countywide Hydromodification Applicability Map accepted by the Executive Officer:
 1. Areas draining to channels that are hardened continuously from the point of discharge into the channel to San Francisco Bay or to the Pacific Ocean; and
 2. Areas draining directly into the Bay, the Ocean, or channels that are tidally influenced at the point of discharge into the channel.

Before a Permittee may implement alternative treatment systems, the Permittee shall, among other requirements in this Provision C.3.c.i.(2)(c)(iii), re-submit the applicable portions of its respective Countywide Hydromodification Applicability Map to accurately identify the two geographic areas described above and the resubmitted applicable

¹³ The Approved Portion is the portion of the Provision C.3.d design volume/flow that may be treated using non-LID treatment measures, as substantiated in the Demonstration of Technical Infeasibility and Demonstration of Commensurate Benefit that have been approved by the Executive Officer.

portions of the map must be accepted by the Executive Officer as accurate.

- b. Alternative treatment systems in the two geographic areas listed in Provision C.3.c.i.(2)(c)(iii)a must have an active General Use Level Designation certification for Enhanced Treatment from the Washington State Department of Ecology's Technology Assessment Protocol – Ecology (TAPE) Program.¹⁴
- c. Implementation of alternative treatment systems requires a Demonstration of Technical Infeasibility¹⁵ that has been submitted by the Permittee to the Water Board and approved by the Executive Officer for each Regulated Project where an alternative treatment system is proposed. Permittees shall include the following documentation in the Demonstration of Technical Infeasibility:
 1. The technical constraints (spatial, utility, or other) to treating 100 percent of the Provision C.3.d design volume and/or flow onsite and offsite using LID and that the Regulated Project maximizes LID treatment within those constraints. This must include an assessment of the technical feasibility of incorporating all potential types and configurations of LID, including, but not limited to, the following: runoff capture and use, suspended pavement systems with the approved biotreatment soil media (e.g., Silva cells), bioretention, green roofs, pervious pavement systems, and infiltration galleries.

For onsite technical infeasibility, a demonstration that the Regulated Project will implement LID in or on all potential or actual onsite landscaping opportunities¹⁶ and that there are no potential or actual onsite landscaping opportunities in or on which LID will not be implemented.

¹⁴ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>

¹⁵ Examples for the Demonstrations of Technical Infeasibility and Commensurate Benefit are provided in the Fact Sheet.

¹⁶ Landscaping opportunities include, but are not limited to: roofs, terraces, patios, courtyards, plazas, quadrangles, athletics areas, outdoor pool areas, playgrounds, parks, bike-separation strips, and adjacent public sidewalks, roads, and rights of way (ROWs).

For offsite technical infeasibility, demonstration that there are no opportunities to implement¹⁷ an equivalent amount of LID in the adjacent or nearby public right of way (ROW) for the Regulated Project; elsewhere in the Permittee's jurisdiction (including opportunities identified in the Permittee's GI Plan); and elsewhere in the same county (including opportunities identified in the GI Plans of other Permittees in the county).

2. How LID was considered by both the project proponent and by the Permittee from the early stages of the project's planning and entitlement processes and how that resulted in the project's final design.
- d. Implementation of alternative treatment systems requires a Demonstration of Commensurate Benefit¹⁵ that has been submitted by the Permittee to the Water Board and approved by the Executive Officer for each Regulated Project where an alternative treatment system is proposed. Permittees shall include the following documentation in the Demonstration of Commensurate Benefit:
1. That the alternative treatment system includes TAPE-certified (pursuant to Provision C.3.c.i.(2)(c)(iii)(b)) treatment controls sized to accommodate the Provision C.3.d design volume and/or flow.
 2. That the alternative treatment system includes flow controls that, based on monitoring and/or field studies, provide flow control benefit commensurate to the flow control benefit of LID measures had they been implemented for the project.

At a minimum, this shall include consideration of vertical infiltration into soils (including soils with low infiltration rates), horizontal infiltration, evapotranspiration, and the effect of inter-event periods on antecedent soil conditions. In places where infiltration is not allowed because of permanent high groundwater (i.e., less than 10 feet below the surface) or documented existing significant soil and groundwater contamination, flow control benefits may be compared to those from lined bioretention cells.

¹⁷ "Implement" in this paragraph is defined to include not only direct implementation by the project proponent, but also indirect implementation via contribution of funding and/or resources to another entity which will construct and/or maintain an equivalent amount of LID.

- e. Implementation – Permittees may implement Provision C.3.c.i.(2)(c)(iii) after they have collectively submitted a Regional Guidance Document to facilitate Permittees’ compliance with the Demonstration of Technical Infeasibility and with the Demonstration of Commensurate Benefit and the Executive Officer has approved the Regional Guidance Document.

At a minimum, the Permittees shall include the following in the Regional Guidance Document:

1. Regional guidance to ensure that Permittees and projects seeking to use alternative treatment systems comply with the requirements for the Demonstrations of Technical Infeasibility and Commensurate Benefit set forth in Provisions C.3.c.i.(2)(c)(iii)c-d;
2. Review of data from monitoring and/or field studies, and guidance on the use of that data sufficient to demonstrate commensurate benefit;
3. Guidance on how the Demonstrations of Technical Infeasibility and Commensurate Benefit apply to different types of projects; and
4. How Permittees will incorporate assessment of technical infeasibility and commensurate benefit into the early stages of their municipal planning processes.

If the Permittees choose to submit a Regional Guidance Document, they must do so on or before the deadline set forth in Provision C.3.c.i.(2)(c)(iii)f.2. The Regional Guidance Document is subject to the approval of the Executive Officer. If the Executive Officer determines that the Regional Guidance Document is sufficiently detailed to enable Permittee review of Demonstrations of Technical Infeasibility and Commensurate Benefits for Regulated Projects on a consistent, objective, and rigorous basis, the Executive Officer may, in the approval of the Regional Guidance Document, allow Permittee approval of the Demonstration of Technical Infeasibility and of the Demonstration of Commensurate Benefit for Regulated Projects in lieu of the requirement for Executive Officer approval of both demonstrations, contingent on Permittees implementing the approved Regional Guidance Document for those Regulated Projects.

f. Reporting

1. In each Annual Report, Permittees shall provide the following information for each Regulated Project that is implementing Provision C.3.c.i.(2)(c)(iii): the final percentage of LID treatment and non-LID treatment and all other information reported for Regulated Projects pursuant to Provision C.3.b.iv.
 2. If the Permittees choose to submit the Regional Guidance Document—which is a prerequisite to their implementation of Provision C.3.c.i.(2)(c)(iii)—it shall be submitted no later than with the 2025 Annual Reports.
- (iv) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:
- a. The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
 - b. The green roof system planting media shall be sufficiently deep to support the long-term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.
- (d) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(c) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Reporting

- (1) For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.iv, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

- i. **Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects and for projects implemented pursuant to Provision C.3.j meet at least one of the following hydraulic sizing design criteria:
 - (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:

- (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
 - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
 - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
 - (a) 10 percent of the 50-year peak flow rate;
 - (b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
 - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
 - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- ii. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.iv.(2).
- iii. **Limitations on Use of Infiltration Devices in Stormwater Treatment Systems**
 - (1) For Regulated Projects and for all projects implemented pursuant to Provision C.3.j, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil. Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

- (2) For any Regulated Project and for any project implemented pursuant to Provision C.3.j that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
- (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
 - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
 - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
 - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;
 - (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
 - (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with

hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

iv. Tree Runoff Reduction and Tree-Based Stormwater Treatment Systems

- (1) The Permittees collectively may submit a proposal, subject to the Executive Officer's approval, which evaluates the benefit and associated criteria of runoff reduction associated with trees with respect to treatment control sizing, which evaluates and includes as appropriate the findings of the Healthy Watersheds, Resilient Baylands project,¹⁸ and which will be considered for incorporation into a subsequent Permit. Such a proposal shall characterize the multiple benefits of green infrastructure beyond standard designs (e.g., urban forestry), develop recommendations for Permittees to achieve the benefits (e.g., beneficial modifications to GI designs, guidelines for coordinating with work such as stream restoration, parks and urban forestry), and suggest opportunities to modify Provision C.3 language in a future Permit to better recognize broader benefits.

The proposal may include treatment control sizing and design criteria for tree-based stormwater treatment systems in combination with systems that provide additional hydrologic benefit (such as structural soils, suspended pavement systems, or other methods to provide tree rooting volume), which provide water quality and hydrologic benefit equivalent to bioretention.

- (2) Tree Interceptor Credits, as described in the 2011 BASMAA Feasibility/Infeasibility Criteria Report submitted pursuant to Provision C.3.c.i.(2)(b)(iv) of MRP 1, shall not be used to reduce the stormwater treatment required pursuant to Provision C.3.

v. Reporting

- (1) If the Permittees collectively submit a proposal pursuant to Provision C.3.d.iv, the proposal shall be submitted by no later than with the 2025 Annual Report.

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.

¹⁸ The San Francisco Estuary Partnership (SFEP) and Association of Bay Area Governments (ABAG) along with several other partners (including Water Board staff) secured a U.S. EPA Water Quality Improvement Fund (WQIF) grant to pursue the Healthy Watersheds, Resilient Baylands project, which in part investigates the stormwater treatment benefit provided by trees within the urban landscape.

- i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) Option 1: LID Treatment at an Offsite Location

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an Offsite Project¹⁹ in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provisions C.3.d and C.3.g, as appropriate) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) Option 2: Payment of In-Lieu Fees

Treat a portion (this portion may be zero; Permittees should treat as much onsite as possible) of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees²⁰ to treat the remaining portion of the Provision C.3.d runoff (and comply with Provision C.3.g, as appropriate) with LID treatment measures at a Regional Project²¹ or Offsite Project. The Regional Project must achieve a net environmental benefit, through a net increase in impervious surface treated, and/or a net reduction in flow and/or pollutant load.

- (3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above (Options 1 and 2), all Offsite Projects and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of an Offsite Project or Regional Project may be extended, up to five years after the

¹⁹ **Offsite Project** – A stormwater treatment facility that discharges into the same watershed as the Regulated Project and is located at a different public or private parcel or property (e.g., right-of-way) from the Regulated Project.

²⁰ **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Offsite Project or Regional Project.

²¹ **Regional Project** – A regional or municipal stormwater treatment facility that captures runoff from a drainage area larger than the parcel on which it is located and discharges into the same watershed as the Regulated Project.

completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Offsite Project or Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

(4) Reporting

- (a) Annual reporting on Alternative Compliance projects shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

ii. Special Projects

- (1) When considered at the watershed scale, certain land development projects characterized as smart growth or high density can either reduce existing impervious surfaces or create less “accessory” impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d for the Special Project’s drainage area that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures onsite;
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and
- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project’s drainage area with some

combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.v, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(3) Category A Special Project Criteria

- (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:
 - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace one half acre or less of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
 - (v) Have at least 85 percent coverage for the entire project site by permanent structures. The remaining 15 percent portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) Any Category A Special Project may qualify for 100 percent LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1).

(4) Category B Special Project Criteria

- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (v) Have at least 85 percent coverage for the entire project site by permanent structures. The remaining 15 percent portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is expressed in Floor Area Ratios (FARs²²) for commercial development projects, in Dwelling Units²³ per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.
- (i) 50 percent Maximum LID Treatment Reduction Credit
 - a. For any commercial Category B Special Project with an FAR of at least 2:1, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two

²² **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

²³ **Dwelling Unit** – A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

types of non-LID treatment systems listed in Provision C.3.e.ii.(1).

- b. For any residential Category B Special Project with a gross density²⁴ of at least 50 DU/Ac, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - c. For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (ii) 75 percent Maximum LID Treatment Reduction Credit
- a. For any commercial Category B Special Project with an FAR of at least 3:1, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - b. For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - c. For any mixed-use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (iii) 100 percent Maximum LID Treatment Reduction Credit

²⁴ **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public rights-of-way, recreational, civic, commercial, and other non-residential uses.

- a. For any commercial Category B Special Project with an FAR of at least 4:1, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- b. For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- c. For any mixed-use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to 100 percent of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(5) Category C Special Project Criteria (Affordable Housing)

- (a) For the purposes of attributing Affordable Housing Credits, affordable housing is defined as preserved housing with deed restrictions running at least 55 years, at rent/mortgage rates (including utilities) no greater than 30 percent of the area median household income (AMI) limits adjusted for household size based on the maximum percentage of AMI for each income category, which are defined by the Federal Department of Housing and Urban Development (HUD) for affordable housing in metropolitan areas as follows: Acutely Low household incomes as 0-15 percent of AMI, Extremely Low household incomes as 16-30 percent of AMI, Very Low household incomes as 31-50 percent of AMI, Low household incomes as 51-80 percent of AMI, and Moderate household incomes as 81-120 percent of AMI.²⁵

²⁵ Emergency homeless shelters constructed pursuant to and consistent with Government Code § 8698.4, including the definition of "homeless shelter" in subdivision (c), and that are temporary are not Regulated Projects under Provision C.3.b. As such, they are not subject to Provisions C.3.c (Low Impact Development) and C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) and shall instead comply with Provision C.3.i (Site Design Measures for Small Projects) and implement relevant best management practices developed under Provision C.17 (Discharges Associated with Unsheltered Homeless Populations). Should the homeless shelter become permanent and the impervious surfaces it created or replaced meet the thresholds for a Regulated Project, or if there is a new Regulated Project and/or Special Project at the site, the project shall comply with Provision C.3, including Provisions C.3.c and C.3.d.

To be considered a Category C Special Project, a Regulated Project must additionally meet both of the following criteria:

- (i) Be primarily a residential development project,²⁶ and
 - (ii) Achieve at least a gross density of 40 DU/Ac.
- (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of four different types of credits that the Category C Special Project may qualify for, namely: Affordable Housing, Location, Density, and Minimized Surface Parking Credits. The total maximum LID Treatment Reduction Credit for any Category C Special Project may not exceed 100 percent.
- (c) Affordable Housing Credits: A Category C Special Project may qualify for Affordable Housing Credits, according to the following criteria. The income limits that shall be used for these criteria are the most current Official State Income Limits (adjusted for household size, and specific to each county), which are defined on the California Department of Housing and Community Development's website.^{27,28} All qualifying affordable housing DUs must be preserved housing with deed restrictions running at least 55 years, at rent/mortgage rates (including utilities) no greater than 30 percent of the total household income.

In each Category C Special Project, up to three DUs that are used as building manager's DUs may be exempted from the deed restriction requirement and may be excluded from the calculations described below in Provision C.3.e.ii.(5)(c)(i)-(ii).

The following two steps shall be used to calculate Affordable Housing Credits:

- (i) First, the percentage of the project's DUs in each affordability category are multiplied by the respective credit multipliers, according to the table below, and rounded to the nearest whole number.

AMI	Credit Multiplier
Moderate ($\leq 120\%$ of AMI)	0.20

²⁶ At least two-thirds of the square footage of the project must be designated for residential use.

²⁷ <https://www.hcd.ca.gov/grants-and-funding/income-limits/state-and-federal-income-rent-and-loan-value-limits>

²⁸ As of June 6, 2023, they are: <https://www.hcd.ca.gov/sites/default/files/docs/grants-and-funding/income-limits-2023.pdf>

Low ($\leq 80\%$ of AMI)	1.00
Very Low ($\leq 50\%$ of AMI)	2.00
Extremely Low ($\leq 30\%$ of AMI)	3.00
Acutely Low ($\leq 15\%$ of AMI) ²⁹	4.00

- (ii) Second, the credits generated from the table above in the first step in Provision C.3.e.ii.(5)(c)(i) are summed together to produce a weighted sum and rounded to the nearest whole number. Then Affordable Housing Credit is granted according to which weighted sum range (in the table below) that whole number (X) falls into:

Weighted Sum (whole number)	Affordable Housing Credit
$X \leq 9\%$	0%
$10\% \leq X \leq 20\%$	20%
$21\% \leq X \leq 30\%$	30%
$31\% \leq X \leq 40\%$	40%
$41\% \leq X \leq 50\%$	50%
$51\% \leq X \leq 60\%$	60%
$61\% \leq X \leq 70\%$	70%
$71\% \leq X \leq 80\%$	80%
$81\% \leq X \leq 90\%$	90%
$91\% \leq X$	100%

- (d) Location Credits: To qualify for any Location Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits in Provision C.3.e.ii.(5)(c).

- (i) A Category C Special Project may qualify for the following Location Credits:
- a. 5 percent Location Credit: Located within a $\frac{1}{4}$ -mile radius of an existing or planned transit hub.

²⁹ DUs that are free to tenants, i.e., that do not charge tenants any rent/mortgage, are included in this category.

- b. 10 percent Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's/Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.
 - (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
 - (iii) One hundred percent of a Category C Special Project's site must be located within the ¼-mile radius of an existing or planned transit hub to qualify for the corresponding Location Credit listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
 - (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised September 2008), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.
- (e) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits listed in Provision C.3.e.ii.(5)(c).
 - (i) A Category C Special Project may qualify for the following Density Credits:
 - a. 5 percent Density Credit: Achieve a gross density of at least 40 DU/Ac.
 - b. 10 percent Density Credit: Achieve a gross density of at least 60 DU/Ac.
 - c. 15 percent Density Credit: Achieve a gross density of at least 100 DU/Ac.
 - (ii) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.

- (f) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Affordable Housing Credits listed in Provision C.3.e.ii.(5)(c).
 - (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
 - a. 5 percent Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (g) Category C Special Projects receiving final discretionary approval prior to July 1, 2022, may use the Category C Special Project criteria included in the Previous Permit.
- (6) Any Regulated Project that meets the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.).

iii. Implementation Level

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.
- (2) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.
- (3) Prior to July 1, 2023, Permittees shall implement Provision C.3.e.ii in Attachment I, which are requirements from the Previous Permit.
- (4) Beginning July 1, 2023, Permittees shall implement Provision C.3.e.ii.

iv. Reporting – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

Any Permittee choosing to require 100 percent LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

v. Reporting on Special Projects

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications, but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100 percent LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100 percent of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:
 - (a) Submittal Date: Date that a planning application for the Special Project was submitted.
 - (b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.

- (c) Site Acreage: Total site area in acres.
- (d) Total Impervious Surface Created/Replaced: The total impervious surface in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1).
- (e) Gross Density in DU/Ac: Number of dwelling units per acre.
- (f) Category C Projects: Number of DUs in each AMI Category and Number of Manager's DUs: For Category C Special Projects only, the number of preserved DUs (DUs with deed restrictions running at least 55 years) that have rent/mortgage rates (including utilities) no less than 30 percent of the Moderate, Low, Very Low, Extremely Low, and Acutely Low area median household income levels specified in Provision C.3.e.ii.(5)(c), and the number of Manager's DUs (up to 3).
- (g) Density in FAR: Floor Area Ratio.
- (h) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
- (i) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Affordable Housing, Location, Density, and Minimized Surface Parking Credits applied.
- (j) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
- (k) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.f. Alternative Certification of Stormwater Treatment Systems

- i. **Task Description** – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third-party reviewer must be a Civil Engineer, or a Licensed Architect or

Landscape Architect registered in the State of California or staff of another Permittee subject to the requirements of this Permit.

- ii. **Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, CASQA, or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

- i. **Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface except where one of the following applies.
 - (1) The post-project impervious surface area is less than, or the same as, the pre-project impervious surface area.
 - (2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes, which extend continuously to the Bay, Delta, or flow-controlled reservoir, or, in a catchment that drains to channels that are tidally influenced.
 - (3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70 percent or more impervious).³⁰

³⁰ The Permittees' maps accepted for Order No. R2-2009-0074 were prepared using this standard, adjusted to 65 percent imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for Order No. R2-2009-0074 are accepted as meeting the 70 percent requirement.

All HM Projects shall meet the HM Standard of either Provision C.3.g.ii or Provision C.3.g.iii.

The Hydromodification Applicability Maps developed by the Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the City of Vallejo, under Order No. R2-2009-0074 remain in effect and are provided in Attachment C to this Permit.

Permittees that do not have the location-based applicability criteria (Provision C.3.g.i.(2) – (3)) shown on existing maps shall develop, or cause to be developed, new maps, overlays to existing maps, or other equivalent information that demonstrates whether a project falls under one of those two criteria (whether or not areas are subject to HM requirements). Such maps, overlays, or other equivalent information shall be acceptable to the Executive Officer and shall not be effective until accepted by the Executive Officer.

ii. **HM Standard**

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, and the City of Vallejo, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow³¹ up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.

³¹ Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include U.S. EPA's Hydrologic Simulation Program—Fortran (HSPF), the U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and U.S. EPA's Storm Water Management Model (SWMM).

- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- (3) **Standard HM Modeling:** Permittees shall use, or shall cause to be used, a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or charts developed using such a model, to design onsite or regional HM controls. The Permittees shall compare, or shall cause to be compared, the pre-project and post-project model output for a long-term rainfall record and shall show that applicable performance criteria in Provision C.3.g.ii.(1)-(3) are met. HM controls designed using the Bay Area Hydrology Model (BAHM) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual. Modifications to the BAHM shall be acceptable to the Executive Officer, shall be consistent with the requirements of this Provision, and shall be reported as required below:
- **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
 - **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

iii. HM Standard – Direct Simulation of Erosion Potential

HM control shall be achieved by maintaining the erosion potential in receiving streams at a value of equal to or less than 1.0. In order to use the Provision C.3.g.iii HM Standard – Direct Simulation of Erosion Potential, for their HM Projects, the CCCWP Permittees shall distinguish the range of situations present within their jurisdictions and incorporate an associated range of sizing factors for HM controls (described below in Provision C.3.g.vi.(2)) to address that range of situations, sufficient to demonstrate that appropriately-sized HM controls in those respective situations would achieve the HM Standard. The CCCWP Permittees shall submit a Technical Report describing and justifying these criteria, subject to the Executive Officer's approval.

iv. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof:

- (1) **Onsite HM controls** are flow duration control structures, LID features and facilities, and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.
- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.
- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.³²

v. Implementation Level

- (1) For Alameda, Santa Clara, San Mateo, and Solano Permittees, HM Projects shall meet the HM Standard in Provision C.3.g.ii immediately.

³² In-stream control projects require a Stream Alteration Agreement from CDFW, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

- (2) For CCCWP Permittees, HM Projects receiving final planning entitlements prior to Executive Officer approval of CCCWP's submittal pursuant to Provisions C.3.g.iii and C.3.g.vi.(2) shall use the methods and criteria specified in CCCWP's Stormwater C.3 Guidebook, 7th Edition (2017), or most current version. Subsequent to Executive Officer approval of CCCWP's submittal pursuant to Provisions C.3.g.iii and C.3.g.vi.(2), HM Projects shall use the methods and criteria specified (and/or acknowledged and approved) in the Executive Officer's approval or conditional approval of that submittal; CCCWP Permittees may alternatively implement the HM Standard in Provision C.3.g.ii.

vi. Reporting

- (1) New HM Applicability Maps or equivalent information prepared pursuant to Provision C.3.g.i, for those Permittees who do not have an approved Map, shall be submitted, acceptable to the Executive Officer, not later than with the 2023 Annual Report.
- (2) With the 2023 Annual Report, the CCCWP Permittees shall submit a Technical Report subject to the Executive Officer's approval, consisting of a HM Management Plan describing how the CCCW Permittees will implement the HM Standard specified in Provision C.3.g.iii. The Technical Report shall include:
 - (a) A complete suite of sizing factors – for each type of HM control that may be used in the County – that is protective of all likely site and watershed characteristics, for sites with soils in Hydrologic Soil Groups (HSG) A, B, C, and D, with equations for adjustments to the sizing factors based on geographic differences (including, but not limited to, annual rainfall intensity and frequency, land use, and other hydrologic characteristics), based on the methods and criteria in the CCCWP Hydromodification Technical Report (September 29, 2017), and pursuant to the recommendations provided in the Water Board's Response to CCCWP's Hydromodification Management Memo of November 4, 2020 (March 19, 2021). The complete suite of sizing factors shall ensure each type of HM control achieves the Provision C.3.g.iii HM Standard.

For the complete suite of sizing factors, the base case sizing factor for HM controls at sites with HSG D soils shall be 6.5 percent.³³

³³ This is a conservative value, based on sites with project-scale built-out imperviousness in the upper watershed for the Lower Control Threshold of 0.1Q2, for soil percolation rates of 0.024 inches per hour, as presented in Table 5-7 on page 58 of the CCCWP Hydromodification Technical Report (September 29, 2017).

- (b) The Technical Report may optionally identify geographic areas or criteria for site-by-site determination, where the use of the prescribed methods, criteria, and suite of sizing factors may result in HM Projects failing to comply with the Provision C.3.g.iii HM Standard. For those areas, the Technical Report shall propose additional onsite mitigation measures, which when implemented in addition to the complete suite of sizing factors specified in Provision C.3.g.vi.(2)(a), ensure that HM controls achieve the Provision C.3.g.iii HM Standard.

The additional onsite mitigation measures include, but are not limited to: site grading to produce self-retaining areas, specific guidance on augmentation of HM control design (e.g., increasing the size of the storage layer), and increases to the HM control sizing factors.

The additional mitigation measures shall not include: reliance on land development restrictions, or on open space preservation, or on the presence of existing or future HM and LID controls located elsewhere within the catchment.

The Technical Report may additionally propose alternative or supplemental methods of compliance with the Provision C.3.g.iii HM Standard, including any combination of: undersized onsite HM controls, additional new HM controls located offsite within the same catchment as the receiving stream, and in-stream controls (e.g., as described in SCVURPPP's 2005 Hydromodification Management Plan Final Report), which when implemented together achieve the Provision C.3.g.iii HM Standard.

- (3) Reporting of HM projects shall be as described in Provision C.3.b.
- (4) Permittees allowing the use of BAHM shall report collectively, with each Annual Report, a listing, summary, and date of modifications made to the BAHM, including the technical rationale. This shall be prepared at the countywide program level and submitted on behalf of participating Permittees.
- (5) In addition, for each HM Project approved during the reporting period, Permittees shall collect and make available the following information. Information shall be reported electronically, and, where appropriate, in tabular form.
- Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control(s);
 - Method used by the project proponent to design and size the device or method used to meet the HM Standard;

- Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- For projects using standard sizing charts, a summary of sizing calculations used;
- For projects using the BAHM, a listing of model inputs; and
- For projects using custom modeling, a summary of the modeling calculations with a corresponding graph showing curve matching (existing, post-project, and post-project-with HM controls curves).

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

- i. **Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
 - (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects and for all projects implemented pursuant to Provision C.3.j that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
 - (a) The project proponent’s signed statement accepting responsibility for the operation and maintenance of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the operation and maintenance of the pervious pavement system(s) (if any), onsite, joint, and/or offsite installed stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity; or

- (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the operation and maintenance responsibility for the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.
- (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
- (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing operation and maintenance inspections of the installed pervious pavement system(s) (if any), stormwater treatment system(s) and HM control(s) (if any).
- (4) A database or equivalent tabular format of the following:
 - (a) All pervious pavement system(s) that total 3,000 square feet or more installed at Regulated Projects, offsite, or at a Regional Project. The total square footage should not include pervious pavement systems installed as private-use patios for single family homes, townhomes, or condominiums.
 - (b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
 - (c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
- (5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each Regulated Project, offsite project, and Regional Project, and shall be made available to Water Board staff upon request:
 - (a) Name and address of the project;
 - (b) Names of the owner(s) and responsible operator(s) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and/or HM control(s);
 - (c) Specific description of the location (or a map showing the location) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and HM control(s) (if any);

- (d) Date(s) that the pervious pavement system(s) (if any), stormwater treatment system(s), and HM controls (if any) was/were installed;
- (e) Description of the type and size of the pervious pavement systems (if any), stormwater treatment system(s), and HM control(s) (if any) installed;
- (f) Detailed information on operation and maintenance inspections. For each inspection, include the following:
 - (i) Date of inspection.
 - (ii) Type of inspection (e.g., installation, annual, followup, spot).
 - (iii) Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers).
 - (iv) Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well) and an indication of whether the treatment system is an onsite, joint, or offsite system.
 - (v) Type of HM controls inspected.
 - (vi) Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately).
 - (vii) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, compliance schedule, administrative citation, administrative order).
- (6) A prioritized O&M Inspection Plan for inspecting all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

- (a) Inspection by the Permittee of all newly installed pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the completion of installation to ensure approved plans have been

followed. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;

- (b) Inspection by the Permittee of an average of 20 percent, but no less than 15 percent, of the total number (at the end of the preceding fiscal year) of Regulated Projects, offsite projects, or Regional Projects. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;
- (c) Inspection by the Permittee of all Regulated Projects, offsite projects, or Regional Projects at least once every five years. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient; and
- (d) For vault-based stormwater treatment systems, Permittees may accept 3rd party inspection reports in lieu of conducting Permittee operation and maintenance inspections only if the 3rd party inspections are conducted at least annually. Information from each 3rd party inspection shall be included in the database or tabular format required in Provision C.3.h.ii.(5) and each inspection shall be clearly identified as a 3rd party inspection.

Each 3rd party inspection report must clearly document the following:

- (i) Name of 3rd party inspection company.
- (ii) Date of inspection.
- (iii) Condition of the treatment unit(s) at the time of inspection.
- (iv) Description of maintenance activities performed during the inspection.
- (v) Date- and time-stamped photographs of the inside of the vault unit(s) before and after maintenance activities.

- (7) An Enforcement Response Plan (ERP) for all operation and maintenance inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:
- (a) Enforcement Procedures – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, follow-up inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
 - (b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement systems, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.
 - (c) Timely Correction of Identified Problems – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement systems, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary, in which case more time may be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

iii. Due Date for Implementation: Immediate.

iv. Maintenance Approvals: The Permittees shall ensure that all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement system, stormwater treatment system, or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities,

but these approvals are not granted, the Permittees shall be deemed to be in compliance with Provision C.3.h. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the operation and maintenance requirements contained therein.

v. Reporting

- (1) The database or equivalent tabular format required in Provisions C.3.b.ii.(4) and (5) shall be maintained by the Permittees. Upon request from the Executive Officer, information from this database or equivalent tabular format shall be submitted to Water Board staff for review. The requested information may include specific details on each inspection conducted within particular timeframes, such as several fiscal years.
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency, and include a copy of that communication with the Annual Report. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.
- (3) Each Permittee shall report the following information in the Annual Report each year:
 - (a) Total number of Regulated Projects in the Permittee's database or tabular format as of the end of the reporting period (fiscal year).
 - (b) Total number of Regulated Projects, offsite projects, and Regional Projects inspected during the reporting period (fiscal year).
 - (c) Percentage of the total number of Regulated Projects that were inspected during the reporting period (fiscal year).
 - (d) A discussion of the inspection findings for the year and any common problems encountered with various types of pervious pavement systems, treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
 - (e) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

C.3.i. Required Site Design Measures for Small Development and Redevelopment Projects and Smaller Detached Single-Family Home Projects

i. Task Description – The Permittees shall require all development and redevelopment projects, which create and/or replace $\geq 2,500$ ft² to $< 5,000$ ft² of impervious surface, and detached single-family home projects,³⁴ which create and/or replace $\geq 2,500$ ft² to $< 10,000$ ft² of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.¹⁰
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.¹⁰

This provision applies to all development projects that require approvals and/or permits issued under the Permittees' planning, building, or other comparable authority.

ii. Implementation Level

- (1) Beginning July 1, 2023, Permittees shall implement Provision C.3.i.
- (2) Prior to July 1, 2023, Permittees shall implement Provision C.3.i in Attachment I, which are requirements from the Previous Permit.

iii. Reporting – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

C.3.j. Green Infrastructure Planning and Implementation

³⁴ **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

- i. Task Description** – The Permittees shall continue to implement their Green Infrastructure Plans (completed during the term of the Previous Permit), as may be updated and/or supplemented to comply with this Order, for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.
- (1) The Plans are intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs and the Urban Creeks Pesticides TMDL) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters.
 - (2) Over the long term, the Plans are intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.
 - (3) Green infrastructure project prioritization is described in the Green Infrastructure Plans based on local characteristics and priorities, and therefore green infrastructure projects will typically be designed to achieve multiple benefits in addition to mercury and PCBs load reduction. Furthermore, this Provision establishes a separate impervious surface retrofit requirement for other-than Regulated Projects.

ii. Implementation Level

(1) Programmatic Implementation

The Permittees shall, individually or in a coordinated manner, update and/or supplement their Green Infrastructure Plans as needed to ensure that municipal processes and ordinances allow and appropriately encourage implementation of green infrastructure, and incorporate lessons learned, by:

- (a) Revising implementation mechanisms to include consideration, or reconsideration, of cooperation with non-municipal entities such as schools on green infrastructure implementation, and otherwise updating implementation mechanisms as appropriate.

- (b) Following through with the development or updates of general plans, specific plans, urban forestry plans, climate change adaptation plans, complete streets plans and other planning documents with a green infrastructure nexus to include language which is more supportive of green infrastructure implementation, as identified by Permittees in their Green Infrastructure Plans. Upon request by Water Board staff, Permittees shall provide justifications for planning documents that they assert do not need to be updated to further support green infrastructure implementation.
- (c) Developing funding and funding mechanisms identified in the Green Infrastructure Plans, such as by working with the relevant agencies to expand the scope of transportation grants to include allocation for green infrastructure; establishing green infrastructure-based or green infrastructure-incorporating stormwater fees, including work that sets the foundation for additional future stormwater fees; establishing or increasing application review fees, and evaluating other opportunities to leverage municipal approval of private development to fund green infrastructure implementation.
- (d) Reviewing countywide green infrastructure implementation guidance documents and adapting them as necessary to account for local considerations if this has not already been completed during the Previous Permit term, and otherwise reviewing and updating general guidelines and standard specifications as appropriate.
- (e) Continuing to implement the tools developed during the Previous Permit term to track and map completed public and private green infrastructure projects, and making the information publicly available.
- (f) Continuing to adopt or amend policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this Provision, as necessary.
- (g) Continuing to conduct outreach and education as follows:
 - (i) Conduct public outreach on the requirements of this Provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.

- (ii) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this Provision and methods of implementation.
- (iii) Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this Provision and methods of implementation.

(2) Numeric Implementation

- (a) By June 30, 2027, the Permittees shall implement, or cause to be implemented, green infrastructure projects within their jurisdictions which are not already defined as Regulated Projects pursuant to Provision C.3.b, such that the impervious surface retrofits listed in Table H-1 of Attachment H are achieved.
- (b) The Permittees may meet the numeric retrofit requirements listed in Table H-1 of Attachment H on a countywide basis. If Permittees within a given county do not collectively achieve their numeric retrofit requirements, each Permittee within that county shall be separately responsible for achieving its individual retrofit requirement.
- (c) Though Permittees may meet their total individual numeric retrofit requirements on a countywide basis, each Permittee shall implement, or cause to be implemented, a green infrastructure project or projects treating no less than 0.2 acres of impervious surface within its jurisdiction, where that project is not already defined as a Regulated Project pursuant to Provision C.3.b. Alternatively, a Permittee may contribute substantially to such a green infrastructure project(s) outside of its jurisdiction and within its County.
- (d) Impervious surfaces treated by non-Regulated Projects may be counted towards the numeric requirements in Table H-1 of Attachment H.

Impervious surfaces treated by Regulated Projects, beyond the minimum required by Provisions C.3.c-d for such Regulated Projects, may be counted towards the numeric requirements in Table H-1 of Attachment H.

If a portion of the impervious surface treated by such a Non-Regulated Project or by Regulated Projects (beyond the minimum required by Provisions C.3.c-d for such Regulated Projects) is later used as part of an Alternative Compliance exchange to offset the treatment required by a Regulated Project pursuant to Provision C.3.e.i, then that portion

may no longer be counted towards the Provision C.3.j.ii.(2) retrofit requirements listed in Table H-1 of Attachment H.

- (e) Projects completed after January 1, 2021, shall be counted towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.
- (f) Projects completed by June 30, 2027, shall be counted towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements.

If a project is not completed by June 30, 2027, it may still count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, if it is approved and fully funded. Permittees that count such projects towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements shall certify in their Annual Reports that the projects are approved and funded by June 30, 2027.

- (g) Controls implemented to satisfy Provision C.3 requirements, including the numeric retrofit requirements specified in Provision C.3.j.ii.(2), may also be used to satisfy Provision C.11 Mercury Controls requirements, and Provision C.12 PCBs Controls requirements, as long as they satisfy the other aspects of those requirements, such as location (i.e., for PCBs, controls that are implemented in areas of old industrial land use or otherwise in areas with identified relatively high concentrations of PCBs).
- (h) Permittees may credit the acreage of impervious surface created or replaced for Regulated Road Reconstruction Projects, specified in Provision C.3.b.ii.(5), towards the Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2).
- (i) Permittees with small rural jurisdictions (e.g., whose stormwater conveyance systems are dominated by roadside ditches) may collectively submit a proposal, subject to the Executive Officer's approval, for pilot projects investigating the use of alternative green infrastructure techniques to comply with the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, with construction completed by June 30, 2027. If a project is not completed by June 30, 2027, it may still count towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, if it is approved and fully funded. Permittees that count such projects towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements shall certify in their Annual Reports that the projects are approved and funded by June 30, 2027.

The proposal shall include a discussion describing the small rural jurisdiction, including density, developed versus undeveloped areas, and piped stormwater conveyances versus roadside ditches.

- (j) Permittees with existing ordinances (or that adopt new ordinances by June 30, 2023) that require Regulated Projects to treat significantly more impervious surface than the minimum required by Provision C.3.c-d, may offset their Numeric Implementation retrofit requirements specified in Provision C.3.j.ii.(2) by a one-time credit of up to 25 percent, and by no greater than one acre. The claimed offset shall not reduce Permittees' Numeric Implementation retrofit requirements below 0.2 acres as specified in Provision C.3.j.ii.(2)(c).

In order to claim this offset, Permittees shall submit a report subject to Executive Officer approval estimating the benefit that will be realized by the adopted ordinance(s) in the current Permit term and the subsequent Permit terms (i.e., until June 30, 2032), as specified in Provision C.3.j.v.(5). The offset claimed shall be no greater than the benefit of the offset estimated in the report. Permittees shall not use the offset prior to Executive Officer approval of the report.

- (3) **Design and Other Criteria** - Green infrastructure projects built pursuant to Provision C.3.j shall:

- (a) Comply with Provision C.3.c and Provisions C.3.e-h.
- (b) Comply with Provision C.3.d. With cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the C.3.j.i.(2)(g) approach outlined in the Previous Permit, significant amounts of run-on from adjacent areas, or other substantial constraints identified by Permittees) and with reporting in their Annual Reports, Permittees may use the Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis Green Infrastructure Facility Sizing for Non-Regulated Street Projects submitted in June 2019, to size Non-Regulated green streets projects. If so, Permittees must comply with the Water Board's June 21, 2019, conditional approval of that submittal, which provides qualifiers to, and the conditions under which, the alternative sizing criteria may be used for Non-Regulated green streets projects.

(4) Long-Term Green Infrastructure Implementation

- (a) The Permittees and their representatives may, together with Water Board staff and impartial science experts (e.g., SFEI, SFEP, U.S. EPA Region 9), collectively form a Technical Working Group (TWG) to discuss long-term green infrastructure goals and recommend long-

term percentage reductions in Permittees' impervious surfaces, at individual, countywide and regional scales. The TWG should prioritize discussion of long-term green infrastructure goals for development and redevelopment projects not already captured by Provision C.3.b, and in particular, public road and right of way reconstruction projects that are not already defined as Regulated Projects by Provision C.3.b.ii.(5). The TWG should additionally review BMPs and performance metrics, and should consider linkages to climate change impacts and resiliency.

- (b) Prior to the submittal of a report containing the TWG's recommendations for long-term percentage reductions in Permittees' impervious surfaces – as prescribed by Provision C.3.j.v.(6) – the TWG should meet at a minimum biannually, and subsequent to that submittal should meet at a minimum annually.

iii. No Missed Opportunities

Each Permittee shall:

- (1) Continue to maintain a list of green infrastructure projects, public and private, that are planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.
- (2) Submit the list with each Annual Report and a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

iv. Participate in Processes to Promote Green Infrastructure

- (1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria,

ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.

- (2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.

v. Tracking and Reporting Progress

- (1) The Permittees shall continue to implement the existing regionally-consistent tracking and mapping tools developed pursuant to Provision C.3.j.i.(2).(d) of the Previous Permit to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met. The tracking and mapping tools shall be used by Permittees to inform issues relevant to program management, such as life cycle costs, asset management, operation and maintenance frequency, and beneficial design changes.
 - (a) Non-regulated green infrastructure projects built pursuant to Provision C.3.j shall be tracked and mapped in the same manner as Regulated Projects. These projects shall be reported in a separate table from Regulated Projects.
 - (b) The tracking and mapping tools shall include a component that is available to the public, which is advertised on individual Permittee websites and on County stormwater program websites, and as appropriate is advertised in other locations. This component must include the following basic information: a brief description of design (e.g., whether bioretention or bioswale), location, land use type, and area treated. If the tools contain additional information which has not been made available to the public such as detailed design information, incurred or planned O&M costs and O&M frequency, condition assessments, and pollutant loads treated, that information shall be made available to Water Board staff upon request.
 - (c) The Permittees shall certify in the 2023 Annual Reports that the tracking and mapping tools have been completed and are being implemented.
 - (d) In each Annual Report, Permittees shall provide summary reports on the implementation of the tracking and mapping tools and shall provide a link to the component which is available to the public.
- (2) In the 2024 and 2026 Annual Reports, report on updates, addenda, and changes to their programmatic implementation, including, but not limited to, the items listed in Provision C.3.j.ii.(1).
- (3) In each Annual Report, Permittees shall report on progress made towards the retrofit requirements described in Provision C.3.j.ii.(2).

- (4) With the 2026 Annual Reports, Permittees shall provide a summary of lessons learned to-date with regard to Provision C.3.j.ii.(1), including topics such as operation and maintenance, sizing, infiltration and other design criteria for stormwater treatment controls, implementation of tracking and mapping tools, cooperation with non-municipal entities, regional project efforts, funding initiatives and opportunities to leverage municipal approval of private development, education and outreach, and development or updates of plan documents with a green infrastructure nexus. In the summary, Permittees shall also discuss attainment of the numeric retrofit requirements prescribed in Provision C.3.j.ii.(2).

In that summary, as applicable, Permittees shall report on how they have addressed deficiencies identified in Provision C.3.j.ii.(1).

- (5) Pursuant to Provision C.3.j.ii.(2)(i), Permittees whose jurisdictions are dominated by rural areas may collectively submit a proposal, subject to the Executive Officer's approval, for the use of alternative green infrastructure techniques. This proposal shall be submitted by no later than with the 2023 Annual Reports.
- (6) Each Permittee that wishes to use the one-time offset specified in Provision C.3.j.ii.(2)(j) shall submit a report estimating the benefit realized by the adopted ordinance(s) in the current Permit term, and until June 30, 2032, by no later than with the 2023 Annual Report, subject to Executive Officer approval. Permittees shall not use the offset prior to Executive Officer approval of the Report. The benefit of the estimated offset shall be no less than the offset claimed during the current Permit term.

In each Annual Report, each Permittee claiming the offset shall report on the acreage of retrofit produced by the implementation of the offset in that Fiscal Year, as well as the cumulative acreage of retrofit produced by the implementation of the offset up to that point in time during the current Permit term.

- (7) By no later than with the 2025 Annual Reports, the Permittees shall collectively submit a report summarizing any TWG efforts and recommendations, as specified in Provision C.3.j.ii.(4).
- (8) Pursuant to Provision C.3.j.ii.(2)(f) and Provision C.3.j.ii.(2)(i), Permittees shall certify in the 2027 Annual Report that any projects counting towards the Provision C.3.j.ii.(2) Numeric Implementation retrofit requirements, which have not been completed by June 30, 2027, have been approved and fully funded by June 30, 2027.

Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects

Project No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Total Impervious Surface Created/ Replaced	Gross Density DU/Ac	Category C Projects: Number of DUs in each AMI Category & Number of Manager's DUs	FAR	Special Project Category	LID Treatment Reduction Credit	Stormwater Treatment Systems

Project No.: Number of the Special Project as it appears in Table 3.1.

Permittee: Name of the Permittee in whose jurisdiction the Special Project will be built.

Address: Address of the Special Project; if no street address, state the cross streets.

Submittal Date: Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

Description: Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

Site Total Acreage: Total site area in acres.

Total Impervious Surface Created/Replaced: The total impervious surfaced in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1).

Gross Density in DU/Ac: Number of dwelling units per acre.

Category C Projects: Number of DUs in each AMI Category: For Category C Special Projects only, the number of preserved DUs (DUs with deed restrictions running at least 55 years) that have rent/mortgage rates (including utilities) no less than 30 percent of the Moderate, Low, Very Low, Extremely Low, and Acutely Low area median household income levels specified in Provision C.3.e.ii.(5)(c), and the number of Manager's DUs (up to 3).

FAR: Floor Area Ratio.

Special Project Category: For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Affordable Housing, Location, Density, and Minimized Surface Parking Credits available.

Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.

C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites that could reasonably be considered to cause or contribute to pollution of stormwater runoff. Permittees shall conduct inspections, effective follow-up, and enforcement to abate potential and actual non-stormwater discharges, consistent with each respective Enforcement Response Plan. These combined efforts will prevent the discharge of pollutants and impacts to beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

- i. Task Description** – Permittees shall have sufficient legal authority to inspect, require effective stormwater pollutant control, and implement progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.
- ii. Implementation Level** – Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites that may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial facilities to address pollutant sources associated with outdoor process and manufacturing areas; outdoor material storage areas; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas, for example, areas used to wash restaurant equipment and mats; outdoor drainage from indoor areas; rooftop equipment; vehicle fueling activities; contaminated and erodible surface areas; and other sources determined by the Permittees or the Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

- i. Task Description** – Permittees shall continue to update and implement an Inspection Plan that will serve as a prioritized inspection workplan. This Inspection Plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

ii. Implementation Level

(1) Facilities to Prioritize for Inspection

Commercial and industrial facilities with the functional aspects and types described below, and other facilities identified by the Permittees as reasonably likely to contribute to pollution of stormwater runoff, shall be prioritized for inspection on the basis of the potential for water quality impact using criteria such as pollutant sources on site, use of pollutants of concern, proximity to a waterbody, and the enforcement history of potential discharges and actual discharges at the facility. Permittees may use a variety of sources to develop and update the business inspection prioritization, including, but not limited to, business license applications, tax records, and inspectors' observations. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plan:

- (a) Sites with the following functions or facilities that may be sources of pollutants when exposed to stormwater:
 - (i) Outdoor process and manufacturing areas
 - (ii) Outdoor material storage areas
 - (iii) Outdoor waste storage, handling, and disposal areas
 - (iv) Outdoor vehicle and equipment storage and maintenance areas
 - (v) Outdoor wash areas
 - (vi) Outdoor drainage from indoor areas
 - (vii) Fueling Areas
 - (viii) Rooftop equipment
 - (ix) Other sources determined by the Permittee or Water Board as reasonably likely to contribute to pollution of stormwater runoff.
- (b) Sites that support industrial and commercial activities that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges, including:
 - (i) Industrial facilities, as defined at 40 CFR 122.26(b)(14), including facilities subject to the Statewide NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
 - (ii) Vehicle Salvage yards;

- (iii) Metal and other recycled materials collection facilities, and waste transfer facilities;
 - (iv) Vehicle mechanical repair, maintenance, fueling, or cleaning facilities;
 - (v) Nurseries and greenhouses;
 - (vi) Restaurants and other food service businesses at which food is prepared or that have onsite eating and drinking areas for customers;
 - (vii) Supermarkets or large grocery stores with outdoor waste storage or cardboard compacting areas;
 - (viii) Building trades facilities or yards, corporation yards;
 - (ix) Building material retailers and storage;
 - (x) Plastics manufacturers; and
 - (xi) Other facilities designated by the Permittee or Water Board to be reasonably likely to contribute to pollution of stormwater runoff.
- (2) Inspection Plan – The Inspection Plan shall be updated annually and shall contain the following information:
- (a) A description of the process for prioritizing inspections and frequency of inspections. The prioritization criteria shall assign a more frequent inspection schedule to the highest priority facilities per Provision C.4.b.ii.(1). If any geographical areas are to be targeted for inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan.
 - (b) Assign appropriate inspection frequency for each industrial and commercial facility based on the priority established in Provision C.4.b.ii.(2)(a), potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.
 - (c) A mechanism to include new businesses that warrant inspections.
 - (d) Total number and a list of all industrial and commercial facilities requiring inspections, within each Permittee's jurisdiction, based on the prioritization criteria established in Provision C.4.(b)ii.(2)(a). This list shall be updated annually.
 - (e) List of facilities scheduled for inspection each fiscal year of the MRP permit term. Each fiscal year's inspection list shall be added to the Inspection Plan at the beginning of the fiscal year as part of the annual

update. Previous fiscal years' inspection lists shall remain in the Inspection Plan.

- (f) If a Permittee relies on multiple entities to perform business and commercial inspections, a list of the entities and their responsibilities with regard to this Permit. Describe how the Permittee oversees and coordinates the entities performing inspections and assures that all sites with the potential to pollute stormwater are inspected.
- (3) Record Keeping – For each facility identified in Provision C.4.b.ii.(2)(d), the Permittee shall maintain a database or equivalent tabular system of at least the following information:
- (a) Name and address of the business and local business operator;
 - (b) A brief description of business activity or pollutant source, including SIC or NAICS code. Examples: outdoor process/manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, rooftop equipment, outdoor drainage from indoor areas, and use of mobile businesses for outdoor fueling, washing, etc.;
 - (c) Inspection priority and inspection frequency; and
 - (d) Whether facility requires coverage under the Industrial General Permit.

iii. Reporting

- (1) Permittees shall include the following information in the 2023 Annual Report:
 - (a) A brief description of which Permittee entity or entities are responsible for reviewing and approving business license applications or a link to the Permittee's website for business license applications.
- (2) Permittees shall make the list required by Provision C.4.b.ii.(2)(d) available upon Water Board request.

C.4.c. Enforcement Response Plan

- i. Task Description** – Each Permittee shall implement and update, as needed, its Enforcement Response Plan (ERP), a reference document to guide inspection staff in achieving timely and effective compliance from all commercial and industrial site operators.

ii. Implementation Level – The ERP shall contain the following:

- (1) **Enforcement Procedures** – A description of the Permittee’s enforcement and compliance procedures, from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.
- (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
- (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual non-stormwater discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.
- (4) **Referral and Coordination with Other Agencies** – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.4.d. Inspections

i. Task Description – Each Permittee shall conduct inspections according to the Inspection Plan in Provision C.4.b.ii.(2) and the ERP in Provision C.4.c.ii. to enforce its ordinance to prevent stormwater pollution.

ii. Implementation Level

- (1) Inspections – Inspections shall be conducted to include at least the following activities:
 - (a) Observations for appropriate BMPs to prevent stormwater runoff pollution, or unauthorized or illicit discharge;
 - (b) Observations for evidence of unauthorized or illicit discharges, illicit connections, and potential discharge of pollutants to stormwater by the Discharger or contractors, such as and including mobile businesses, that operate on the facility;
 - (c) Observations for noncompliance with Permittee ordinances and other local requirements; and
 - (d) Verification of coverage under the Industrial General Permit, if applicable.
- (2) Record Keeping – Permittees shall maintain adequate records to demonstrate compliance and appropriate follow-up enforcement responses for facilities inspected. Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial and commercial site inspections:
 - (a) Name of facility/site inspected
 - (b) Inspection date
 - (c) Industrial General Permit coverage required (Yes or No)
 - (d) Compliance status
 - (e) Specific problems, including inadequate and ineffective BMPs
 - (f) Type of enforcement (if applicable)
 - (g) Problem resolution date
 - (h) Additional comments

The electronic database or equivalent tabular system and any supporting documentation shall be made readily available to Water Board staff or its representative during inspections, audits, or upon request.

- (3) Data Evaluation – Permittees shall evaluate the frequency of potential and actual non-stormwater discharges by business category. Note trends and, as needed, implement focused inspections or education in subsequent years to address trends.

iii. Reporting

- (1) Permittees shall include the following information in each Annual Report:
 - (a) Number of inspections conducted;
 - (b) Number of each type of enforcement action, as listed in each Permittee’s ERP, issued;
 - (c) Number of enforcement actions or discrete number of potential and actual discharges fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner; and
 - (d) Frequency of potential and actual non-stormwater discharges by business category.
- (2) Permittees shall make the list of facilities required to have coverage under the Industrial General Permit, but that have not filed for coverage, available upon Water Board request. For facilities added to the list or re-inspected during this Permit term, the list shall include the date when the facility was first identified and the date when it was most recently inspected or evaluated.

C.4.e. Staff Training

- i. **Task Description** – Permittees shall provide focused training for industrial and commercial site inspectors and illicit discharge detection and elimination inspectors annually. Trainings may be program-wide, region-wide, or Permittee- specific.
- ii. **Implementation Level** – At a minimum, provide inspection training, within the 5-year term of this Permit, in the following topics:
 - (1) Urban runoff pollution prevention;
 - (2) Inspection procedures;
 - (3) Business Inspection Plan;
 - (4) Enforcement Response Plan;
 - (5) Illicit Discharge Detection and Elimination; and
 - (6) Appropriate BMPs to be used at different industrial and commercial facilities.

iii. Reporting – The Permittees shall include the following information in each Annual Report:

- (1) Dates of training;
- (2) Training topics covered;
- (3) Total number and percentage of industrial and commercial site inspectors attending training; and
- (4) Total number and percentage of illicit discharge detection and elimination inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to detect and control illicit discharges not otherwise controlled under Provisions C.4. – Industrial and Commercial Site Controls, C.6. – Construction Site Controls, and C.17 – Discharges Associated with Unsheltered Homeless Populations. Permittees shall implement an illicit discharge program that includes active surveillance and centralized complaint collection and follow-up to detect and eliminate illicit discharges into the MS4. Permittees shall maintain a complaint tracking and follow-up data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

- i. Task Description** – Permittees shall have the legal authority to prohibit and control illicit discharges and implement progressively stricter enforcement to achieve expedient compliance.
- ii. Implementation Level**
 - (1) Permittees shall have adequate legal authority to address illicit discharges to the MS4, including, but not limited to, the following:
 - (a) Discharges of sewage, trash, or other potentially polluting or hazardous materials;
 - (b) Discharges of wash water resulting from the cleaning of exterior surfaces, pavement, equipment, and other facilities of any commercial business, or any other public or private facility, including discharges from mobile businesses;
 - (c) Discharges of runoff from material storage areas, including those containing chemicals, fuels, or other potentially polluting or hazardous materials;
 - (d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
 - (e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes;
 - (f) Discharges of food-related wastes (e.g., grease, fish processing wastes, restaurant kitchen mat and trash bin wash water); and
 - (2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to the MS4.

- (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than stormwater to the MS4.
- (4) Permittees shall have adequate legal authority to hold mobile businesses, and the businesses, property managers, property owners, and other associated entities that hire a mobile business, responsible for stormwater pollution discharged by the mobile business operating at their location.

C.5.b. Enforcement Response Plan (ERP)

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective abatement of illicit discharges and compliance from responsible parties.
- ii. **Implementation Level** – The ERP shall contain the following:
 - (1) **Enforcement Procedures** – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.
 - (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
 - (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and/or actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.

- (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.5.c. Spill, Dumping, and Complaint Response Program

- i. **Task Description** – Each Permittee shall implement a program to respond to spills, dumping, and complaints.

- ii. **Implementation Level**

- (1) Each Permittee shall have a central contact point for the public and Permittee’s staff to report spills, dumping, and complaints. At a minimum, this central contact point shall include a phone number. Permittees shall also include, as feasible, a user-friendly web address for reporting for spills and dumping or a link to a web-based reporting application.
- (2) Each Permittee shall publicize the phone number on its website, and, if used, a web reporting address or link to a web-based reporting application, to the Permittee’s staff and the public. The contact information on the Permittee’s website shall be kept up-to-date, and updated at least annually when changed. This central contact point shall be readily searchable and accessible on the Permittee’s website.
- (3) Each Permittee shall require the municipal staff conducting routine maintenance and inspection activities to report illicit discharges found during their activities to the central contact point so that illicit discharge staff can investigate and track.
- (4) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and/or phone tree for the staff responsible for the spill and dumping response program. At a minimum, this flow chart and/or phone tree shall identify staff or positions responsible for receiving the complaints and investigating and abating the complaints.
- (5) Each Permittee shall also maintain and update, as needed, a spill, dumping, and complaint response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittee’s immediate capabilities.

- (6) Each Permittee shall conduct reactive inspections in response to spill, dumping, and complaint reports and shall also conduct follow-up inspections, as needed, to ensure that corrective measures have been effectively implemented to achieve and maintain compliance. The start of the investigation of a spill or discharge shall not exceed 3 business days from the date the complaint was received by the Permittee. If additional time is required, the Permittee shall document the rationale for the delay.

iii. Reporting

- (1) Permittees shall provide the following information in the 2024 and 2026 Annual Reports:
 - (a) The spill, dumping, and complaint reporting phone number and, if used, a web reporting address or a link to a web-based reporting application;
 - (b) A screen shot of the Permittee's website showing the central contact point; and
 - (c) A discussion of how the central contact point – spill and dumping reporting phone number and, if used, the web address or web-based reporting application – is being publicized to Permittees' staff and the public.
- (2) Copies of the phone trees and contact lists required in Provision C.5.c.ii (4) and (5) shall be provided as attachments to, or links in, the 2026 Annual Report. The lists may be redacted to remove references to private cell phone numbers. The unredacted phone trees and contact lists shall be made available to Water Board staff or representatives during audits or inspections, and upon request

C.5.d. Tracking and Case Follow-up

- i. **Task Description** – All incidents or discharges reported to the spill, dumping, and complaints central contact point, that might discharge into the MS4, shall be logged to track follow-up and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems and inter/intra-agency coordination, where appropriate. It is not necessary to track and report data according to this provision if they are tracked and reported according to State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.
- ii. **Implementation Level** – Maintain records for tracking and follow-up to water quality spills, dumping, and complaints that might discharge into the MS4 in an electronic database or equivalent tabular system.

The water quality spills, dumping, and complaint tracking system shall contain the following information:

- (1) Complaint information:
 - (a) Date that complaint is received by the Permittee;
 - (b) Type of pollutant; and
 - (c) Problem Status (potential or actual discharge).
- (2) Investigation information:
 - (a) Date and time investigation of spill or discharge started;
 - (b) Date and time response to illegal dumping report or complaint started;
 - (c) Agency, department, or other entities responding to the complaint or discharge;
 - (d) Type of pollutant;
 - (e) Identify the entered storm drain or approximate location, and/or receiving water;
 - (f) Date and time abated; and
 - (g) Type of enforcement based on the Permittee's ERP.
- (3) Responses to discharges or dumping associated with unsheltered populations, including those living in homeless encampments or vehicles, shall be coordinated with the Permittee's Provision C.10 Trash Control efforts, Provision C.17 Homeless Encampment Discharge Control efforts, and other agencies and entities addressing homelessness issues, as appropriate.

iii. Reporting

- (1) Permittees shall provide the following information in the Annual Report:
 - (a) Number of discharges reported;
 - (b) Number of discharges reaching storm drains and/or receiving waters;
 - (c) Number of discharges resolved in a timely manner; and
- (2) The electronic database or equivalent tabular system and supporting documentation shall be made available to Water Board staff or representatives during audits or inspections, and upon request.

C.5.e. Control of Mobile Sources

- i. Task Description** – Permittees shall have oversight and control of pollutants associated with mobile businesses.
- ii. Implementation Level** – Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.

(1) The program shall include the following:

- (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, including, but not limited to, automobile washing, vehicle fueling, power washing, steam cleaning, graffiti removal, and carpet cleaning;
- (b) Implementation of an enforcement strategy that specifically addresses mobile businesses;
- (c) Updating and maintaining a mobile business inventory at least annually;
- (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee’s jurisdiction; and
- (e) Inspection of mobile businesses.

(2) Permittees may cooperate countywide and/or region-wide with the implementation of their programs for mobile businesses, including sharing of mobile business information, BMP requirements, enforcement action information, and educational materials.

iii. Reporting

(1) In the 2026 Annual Report, each Permittee shall provide the following:

- (a) Minimum standards and BMPs for each of the various types of mobile businesses;
- (b) Enforcement strategy;
- (c) A list and summary of the countywide or regional activities conducted, including BMP requirements, enforcement action information, and educational materials (Permittees’ annual reports may refer to the countywide or regional reports for this information);
- (d) A list and summary of specific outreach events and education conducted for each type of mobile business operating within the Permittee’s jurisdiction; and
- (e) A copy of the most recent version of the mobile business inventory.

- (2) In each Annual Report, each Permittee shall include at least the following:
 - (a) The total number of inspections conducted of mobile businesses;
 - (b) The number of each type of mobile business inspected; and
 - (c) A summary of the enforcement actions taken against mobile businesses during the reporting year.

C.5.f. Municipal Separate Storm Sewer System (MS4) Map

- i. **Task Description** – Each Permittee shall make the current map(s) of its MS4 available to the public.

Permittees shall identify information missing from the current MS4 maps and develop a plan and schedule to compile additional storm sewer system information, considering the potential to identify component locations, size or specifications, materials of construction, and condition. This information will be used to update Permittee maps and databases.

- ii. **Implementation Level**

- (1) Current MS4 Maps – Permittees shall make current maps of the MS4 publicly available, either electronically or in hard copy. Public availability shall be made through a single point of contact that is convenient for the public, such as a staffed counter or web-accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.
- (2) Updates to MS4 Maps – During the current Permit term, each Permittee shall complete the following:
 - (a) Determine information missing from the Permittee’s current MS4 map(s), which may include Oakland Museum watershed maps, existing MS4 maps or drawings in the Permittee files, or other storm sewer system information databases.
 - (b) Identify and make available upon Water Board request maps of the storm sewer system and other stormwater controls installed after publication of the Oakland Museum watershed maps within the Permittee's jurisdictional area.
 - (c) Develop a plan and schedule for updating the Permittee’s storm sewer system information. Permittees or countywide stormwater programs may work together or with the Oakland Museum of California to develop a plan and schedule for updating existing information, maps, drawings, and databases. The plan will consider the potential to identify storm sewer system component locations, size or specifications, materials of construction, and condition.

iii. Reporting

- (1) In the 2024 Annual Report, Permittees shall discuss how they make MS4 maps available to the public and how they publicize the availability of the MS4 maps.
- (2) Submit a plan and schedule with the 2026 Annual Report to update existing storm sewer system information as described above.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with follow-up and enforcement consistent with each Permittee's respective Enforcement Response Plan, to prevent construction site discharges of pollutants into the storm drains. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers. Each Permittee shall in its reporting demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

C.6.a. Legal Authority for Effective Site Management

i. Task Description – Permittees shall have the authority to require effective stormwater pollutant controls to prevent discharge of pollutants into the storm drains, and to implement progressive enforcement to achieve expedient compliance and cleanup at all public and private construction sites.

ii. Implementation Level

- (1) Permittees shall have the legal authority to require, at all construction sites year-round, effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-stormwater management through all phases of construction (including, but not limited to, grubbing, clearing, site grading, filling, excavation, leveling, building, landscaping, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
- (2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and cleanup at all construction sites year-round.

C.6.b. Enforcement Response Plan (ERP)

i. Task Description – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance at all public and private construction sites.

ii. Implementation Level – The ERP shall contain the following:

- (1) **Enforcement Procedures** – A description of the Permittee's procedures from discovery of problems through confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, follow-up inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of all persons responsible for implementing the ERP.

- (2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, inadequate waste or materials management, evidence of actual discharges, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs); actual discharges (observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4); non-compliance with previous enforcement actions; and sites with a history of potential and/or actual discharges.
- (3) Timely Correction of Potential and Actual Discharges – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and actual discharges. Permittees shall require actual discharges to cease immediately. Corrective actions shall be implemented before the next rain event, and no longer than 10 business days after the potential or actual discharges are discovered. Corrective actions can be temporary, in which case more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, the rationale, including the expected time frame for compliance, shall be recorded in the electronic database or equivalent tabular system.
- (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual discharges, including compliance required by Discharge Prohibition A.1. For cases in which the Permittee’s enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement. Permittees may also contact and coordinate with Water Board staff for joint inspections and parallel enforcement of large, complex, or noncompliant sites.

C.6.c. Best Management Practices Categories

- i. **Task Description** – Permittees shall require all construction sites to have site-specific, and seasonally- and phase-appropriate, effective BMPS in the following six categories:
 - (1) Erosion Control
 - (2) Run-on and Runoff Control
 - (3) Sediment Control, including entrance/exit and perimeter controls
 - (4) Active Treatment Systems, as necessary
 - (5) Good Site Management, including materials and waste management

(6) Non-Stormwater Management

ii. Implementation Level

The BMPs targeting specific construction site pollutants within the six categories listed in Provision C.6.c.i. shall be site-specific. Permittees may select site-specific BMPs, or BMP combinations, from resources such as:

- (1) CASQA BMP Handbook, Construction, December 2019
- (2) Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, May 2017, and addenda
- (3) Other BMPs shown to provide equivalent or better protection

C.6.d. Plan Approval Process

i. Task Description – Permittees shall review erosion control plans for consistency with local requirements and the appropriateness and adequacy of proposed BMPs for each site before issuing grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for permit coverage under the Construction Stormwater General Permit.

ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

- (1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in Provision C.6.c.i. are planned.³⁵
- (2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction Stormwater General Permit.
- (3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in Provision C.6.c.i. in

³⁵ If SWPPPs do not include erosion control plan drawings for use by construction workers and managers at the site, erosion, sediment, and site control plans and drawings must also be submitted and reviewed.

preventing the discharge of construction pollutants into the storm drain. Permittees shall require timely corrections of all actual and potential discharges observed.

ii. Implementation Level

(1) Wet Season Notification

By September 1 of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil, hillside projects, and high priority sites to prepare for the upcoming wet season.

(2) Frequency of Inspections

Inspections shall be conducted monthly during the wet season³⁶ at the following sites:

- (a) All construction sites disturbing one or more acre of land;
- (b) All hillside projects (based on the Permittee's map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with ≥ 15 percent slope) disturbing greater than or equal to 5,000 square feet; and
- (c) High Priority Sites – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:
 - (i) Soil erosion potential or soil type;
 - (ii) Site slope;
 - (iii) Project size and type;
 - (iv) Sensitivity of receiving waterbodies;
 - (v) Proximity to receiving waterbodies;
 - (vi) Non-stormwater discharges; and
 - (vii) Any other relevant factors as determined by the local agency or the Water Board.

³⁶ For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

(3) Contents of Inspections

Inspections shall focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in Provision C.6.c.i.

Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

- (a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from Provision C.6.d.ii.(1));
- (b) Assessment of the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in Provision C.6.c.i;
- (c) Visual observations for:
 - (i) Actual discharges of sediment and/or construction-related materials into storm drains and/or waterbodies.
 - (ii) Evidence of sediment and/or construction-related materials discharges into storm drains and/or waterbodies.
 - (iii) Illicit connections, and
 - (iv) Potential illicit connections.
- (d) Education on stormwater pollution prevention, as needed.

(4) Tracking

All inspections shall be recorded on a written or electronic inspection form. Inspectors shall follow the ERP for all actual and potential discharges discovered during the inspection.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

- (a) Site name;
- (b) Inspection date;
- (c) Weather during inspection;
- (d) The department, agency, or other entity performing the inspection.

- (e) Enforcement Response Level (Use ERP);
- (f) Problem(s) observed using Illicit Discharge and the six BMP categories listed in Provision C.6.c.i;
- (g) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
- (h) Comments, which shall include all rationale for longer compliance times, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

- (1) Each Permittee shall summarize the following information in the Annual Report:
 - (a) Total number of construction sites requiring inspections during at least part of the Permit year;
 - (b) Total number of active hillside sites disturbing less than one acre of soil requiring inspection;
 - (c) Total number of active sites disturbing one acre or more of soil;
 - (d) Total number of active sites disturbing less than one acre of soil identified as High Priority sites in Provision C.6.e.ii.(2)(c) requiring inspections;
 - (e) Total number of inspections conducted;
 - (f) Number of enforcement actions taken by type, organized by the categories in each Permittee's ERP;
 - (g) Number of illicit discharges, actual and potential, of sediment or other construction-related materials; and
 - (h) Number of enforcement actions or discrete number of potential and actual discharges fully corrected prior to the next rain event, but no longer than 10 business days after the potential and actual discharges³⁷ are discovered or otherwise considered corrected in a timely, though longer period.
- (2) In the 2027 Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in Provision C.6.e.ii.(4). This evaluation shall include findings on the

³⁷ Permittees who track by discrete potential and actual discharges shall report by discrete discharges. Permittees who track by enforcement actions shall report by enforcement actions

program's strength, comparison to previous years' results, as well as areas that need more focused education for site owners, operators, and developers the following year.

- (3) An electronic copy of the construction site and inspection database(s) shall be made available to the Water Board during inspections, audits, or upon request.

C.6.f. Staff Training

- i. Task Description** – Permittees shall provide training or access to training for all staff conducting construction stormwater inspections.
- ii. Implementation Level** – Permittees shall provide training at least every other year to staff responsible for conducting construction site stormwater inspections. Training topics shall include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and the ERP.
- iii. Reporting** – Permittees shall include in each Annual Report the following information:
 - (1) Dates of training;
 - (2) Training topics covered;
 - (3) Total number of inspectors, including both municipal and non-municipal staff; and
 - (4) The number of inspectors attending each training, including both municipal and non-municipal staff.

If there was no training in that year, so state.

C.7. Public Information and Outreach

Each Permittee shall increase the awareness of the community, including diverse socioeconomic groups, government elected officials and staff, and ethnic communities, regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate these impacts; positively influence the public's waste disposal and runoff pollution generation behavior; and involve various citizens in mitigating the impacts of stormwater pollution. Outreach required in other provisions may be conducted under Provision C.7.

C.7.a. Outreach Campaigns

- i. Task Description** – Permittees shall continue to participate in or contribute to outreach campaigns, with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audiences.
- ii. Implementation Level**
 - (1) Target a broad audience with a minimum of one outreach campaign with specific stormwater runoff pollution prevention messages. The outreach campaign(s) should utilize various electronic and print media, and paid and free media, including social media, as practicable, to best reach different demographics. The outreach campaign(s) may be coordinated regionally or countywide.
 - (2) Permittees shall conduct timely evaluations to measure the effectiveness of the outreach campaigns. Effectiveness assessment/evaluation may be done regionally or countywide.

C.7.b. Stormwater Pollution Prevention Education

- i. Task Description** – Permittees shall continue to maintain a point of contact to provide the public with stormwater pollution prevention information.
- ii. Implementation Level**
 - (1) Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively, and Permittees may combine this function with the spill and dumping complaint central contact point required in Provision C.5 – Illicit Discharge Detection and Elimination.
 - (2) Each Permittee shall place and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website. In lieu of posting the detailed informational pages directly on their individual websites, Permittees may choose to

provide links from their websites to the countywide program’s websites and/or websites for other collaborative efforts between Permittees. Each Permittee shall publicize its website.

C.7.c. Public Outreach and Citizen Involvement Events

- i. **Task Description** – Public outreach shall include a variety of pollution prevention messages such as for car washing; proper use, storage, and disposal of vehicle waste fluids; household waste materials disposal; pesticide use; and trash. Public outreach events may include venues such as fairs, shows, workshops, and household waste collection events. Citizen involvement events may include venues such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, storm drain inlet marking, riparian restoration activities, and community grants.
- ii. **Implementation Level** – Each Permittee shall annually participate and/or host a mix of public outreach and citizen involvement events according to its population, as shown in the table below:

Table 7.1 Public Outreach and Citizen Involvement Events³⁸

Permittee Population	Number of Events
< 10,000	2
10,001– 40,000	4
40,001 – 100,000	5
100,001 – 175,000	7
175,001 – 250,000	8
> 250,000	10
Non-population-based Permittees	6

C.7.d. Watershed Stewardship Collaboration

- i. **Task Description** – Permittees shall individually or collectively collaborate with other organizations to encourage and support community watershed stewardship activities. This may include collaborating with community groups such as local watershed forums and “friends of creek” groups; encouraging and supporting the development of grassroots watershed groups; or engaging

³⁸ Permittees may claim individual credits for events in which their Countywide Program participates, that the County Program supports or hosts, or other collaborative efforts, provided such events are publicized in the Permittee’s jurisdiction.

existing groups, such as neighborhood associations, in watershed stewardship activities. This may also include collaboration with other organizations that benefit the health of the watershed, such as ReScape California, or collaboration to introduce community watershed stewardship activities into organizations focused on other environmental or sustainability efforts.

- ii. **Implementation Level** – Annually demonstrate effort.

C.7.e. School-Age Children Outreach

- i. **Task Description** – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-aged children (K through 12).
- ii. **Implementation Level** – Implement annually and demonstrate effectiveness of efforts through assessment.

C.7.f. Outreach to Municipal Officials

- i. **Task Description** – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.
- ii. **Implementation Level** – At least once per permit cycle, or more often.

C.7.g. Tracking and Reporting

- i. **Task Description** – Permittees shall electronically track outreach efforts in a table or spreadsheet. The tracking document should include, at a minimum:
 - (1) Outreach event or campaign type;
 - (2) Dates;
 - (3) Target Audience;
 - (4) Number of participants and number of participants compared to previous events, if applicable;
 - (5) Location(s) or website address, as applicable;
 - (6) Contact information for venues and coordinators, if applicable;
 - (7) Materials and activities, as applicable;
 - (8) Level of effort;
 - (9) Evaluation of effectiveness;
 - (10) Lessons learned; and

(11)Planned changes in approach or implementation, if any.

ii. Implementation Level – The tracking document shall be made available to the Water Board staff during inspections, audits, or upon request.

iii. Reporting

- (1) In each Annual Report, each Permittee (or the Countywide Program, if the tracking was done countywide or regionally) shall submit a table listing the types of outreach programs implemented during that Permit year along with a brief description. The table should be a cumulative table showing the number, if applicable, of each type of outreach campaigns or events occurring during each Permit year.
- (2) In the 2023 Annual Report, each Permittee shall list the Permittee's point of contact and the URL for its stormwater pollution website. The Permittee shall discuss how the point of contact and website are publicized and maintained and certify that it has a website dedicated to providing and maintaining information on stormwater issues, watershed characteristics, and stormwater pollution prevention approaches. Changes in this information shall be reported in the Annual Report for the year in which the change occurs.
- (3) In the 2027 Annual Report, each Permittee (or the Countywide Program, if the effectiveness assessment/evaluation was done countywide or regionally) shall submit a summary of the effectiveness assessments/evaluations by type of outreach described in Provisions C.7.a through C.7.f. The summary shall include plans for continuing or modifying each outreach type during the next permit term.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

All Permittees shall comply with all the monitoring requirements in this Provision. Permittees may choose any of the following mechanisms, or a combination of these mechanisms, to meet the monitoring requirements:

- i. Regional Collaboration.** Permittees are encouraged to continue contributing to the Regional Monitoring Collaborative (RMC), which coordinates water quality monitoring conducted by all the Permittees. Permittees are encouraged to consider and assign additional duties to the RMC for purposes of increased efficiencies, particularly, but not limited to, reporting duties.
- ii. Area-wide Stormwater Program.** Permittees may contribute to their countywide or area-wide Stormwater Program, so that the Stormwater Program conducts monitoring on behalf of its members.
- iii. Third-party Monitoring.** Permittees may use data collected by a third-party organization, such as the Water Board or Department of Pesticide Regulation, to fulfill a monitoring requirement, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.b.

C.8.b. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Program Plan (QAPrP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

C.8.c. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions³⁹ such as:

- Are chemical concentrations in the Estuary potentially at levels of potential concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?

³⁹ https://www.sfei.org/sites/default/files/biblio_files/MYP%202021%20FINAL.pdf (SF Bay Regional Monitoring Program (RMP) Multi-Year Plan, January 2021). While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?
- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

The Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair share financially on an annual basis.

C.8.d. Low Impact Development (LID) Monitoring

LID Monitoring is intended to measure compliance and effectiveness of LID controls. It will improve the understanding of the benefit of LID implementation, in particular, green stormwater infrastructure, on pollutant loading and hydrology of receiving waters within Permittees' jurisdictions, at different space and time scales, and inform the design, construction, operation and maintenance (O&M) and future implementation of LID. LID Monitoring may also be used to calibrate and validate models that estimate pollutant removal effectiveness and inform sizing of LID facilities (e.g., countywide C.3 technical guidance documents, reasonable assurance analysis models, and other sizing and assessment models).

LID Monitoring is intended to answer both of the following two management questions:

- What are the pollutant removal and hydrologic benefits, such as addressing impacts associated with hydromodification, of different types of LID facilities, systems, components, and design variations, at different spatial scales (e.g., single control vs watershed or catchment scale), and how do they change over time?
- What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic performance?

i. LID Monitoring Plans

- (1) The Permittees shall, at the regional or countywide level, develop LID Monitoring Plans to implement the requirements in Provision C.8.d.iii-iv. The LID Monitoring Plans shall, at a minimum:

- (a) Explain how the study(s) will address both management questions and propose monitoring questions necessary that will address both management questions.
 - (b) Describe the LID facility(s) or system(s) and study area(s), including the characteristics, land use and management actions within the tributary drainage area to the LID facility(s) or system(s) that will be monitored.
 - (c) List the monitoring stations, monitoring parameters, and associated measurement, sample and analytical methods that will be utilized.
 - (d) Establish a monitoring schedule, including number and type (wet weather and dry weather) of monitoring events for each site, that may result in a greater number of total and/or annual monitoring events than the minimum required in Table 8.d.2, and including a discussion of the allocation of samples between and within sites.
 - (e) Describe the data evaluation methods, such as statistical analyses to test whether differences in concentrations are statistically significant.
 - (f) Include study-specific Quality Assurance Project Plans (QAPPs), which, at a minimum, are comparable to the SWAMP QAPrP.
 - (g) Provide annual cost estimates for the implementation of the LID Monitoring Plan.
 - (h) Explain how sampling and analytical methodologies will be regionally consistent.
- (2) Permittees shall implement no later than the deadline set forth in Provision C.8.d.v, the approved or conditionally approved LID Monitoring Plans as meeting the requirements herein (including consideration of countywide and regional representativeness and whether the information generated will reliably address the LID Monitoring management questions).

ii. Regional Collaboration

To assist with the development and implementation of scientifically-sound LID Monitoring Plans, to facilitate regional consistency with respect to sampling and analytical methodology, and to make recommendations about allocation of samples between and within different sites, the Permittees shall form and convene a Technical Advisory Group (TAG) which includes impartial science advisors (e.g., SFEI, SCCWRP) and Water Board staff, to review and make recommendations regarding the LID Monitoring Plans (including their study design, analysis methods, results, and conclusions) prior to submission of the LID Monitoring Plans to the Executive Officer. In order to effectuate this review, the Permittees shall submit their draft LID Monitoring Plans to the TAG by March 1, 2023. Prior to the Executive Officer's approval or conditional approval of the LID Monitoring Plans, the TAG shall be convened at least biannually. Thereafter, it shall be convened at least annually to provide continued feedback regarding the implementation of Provision C.8.d, including but not limited to study design, sample locations, and analysis methods.

iii. Methods

The Permittees shall implement or cause to be implemented the LID effectiveness monitoring methods listed in Table 8.d.1.

iv. Parameters and Intensities

- (1) Permittees shall conduct LID Monitoring consistent with the parameters and intensities specified in Table 8.d.2.
- (2) Monitoring must be conducted according to test procedures in 40 CFR part 136 for analyses of pollutants unless another method is required under 40 CFR chapter 1, subchapter N. For PFAS, if there are no standard methods in 40 CFR part 136, Permittees may use other methods, such as those recommended by U.S. EPA for non-potable water and other environmental media.
- (3) In a given water year, if there are not enough storm events for Permittees to sample (i.e., due to weather/climate), Permittees may certify that in their subsequent LID Monitoring Status Report and perform the missed sample events in the subsequent water year.

v. Implementation Level – Permittees shall begin implementation of the approved or conditionally approved LID Monitoring Plans by no later than the start of the 2024 Water Year, which is October 1, 2023.

vi. Reporting – The Permittees shall submit their LID Monitoring Plans for Executive Officer approval by May 1, 2023.

Table 8.d.1 LID Monitoring Methods

	Management Question	Monitoring Methods
1	<p>What are the pollutant removal and hydrologic benefits of LID components, facilities and/or systems (and of different combinations of components, facilities and/or systems), including variations in design and how do they change over time?</p>	<p>Monitoring methods to investigate pollutant removal benefits shall consist of:</p> <ul style="list-style-type: none"> • Required: Collection and analysis of the parameters listed in Table 8.d.2, in stormwater influent and effluent (simultaneously) – using automated samplers to collect flow-weighted composite EMCs (time-weighted composites are allowed if they have many subsamples and can be closely approximated as flow-weighted composites) – at the component, facility, site, and/or watershed scale; and • Optional: sampling of sediment and other technically sound and accepted monitoring methods designed to investigate pollutant removal benefits. <p>Monitoring methods to investigate hydrologic performance (flow) shall consist of:</p> <ul style="list-style-type: none"> • Required: Measurement of stormwater runoff quantity and/or flow at the component, facility, site and/or watershed scale, in both the influent and effluent of the LID BMP(s). • Optional: Measurement of stream flow to evaluate watershed scale benefits; development of runoff hydrographs; water balance monitoring; collection and analysis of infiltration rates or water depth at the facility and/or site scale; or other technically sound and accepted monitoring methods designed to investigate hydrologic performance. <p>Monitoring methods to investigate changes over time include:</p> <ul style="list-style-type: none"> • Longitudinal study(s), using the above monitoring methods applied at the component, facility, and/or system scales, over different time scales.
2	<p>What are the minimum levels of O&M necessary to avoid deteriorated LID facilities, systems, and components that reduce pollutant removal and hydrologic performance?</p>	<ul style="list-style-type: none"> • Monitoring methods assigned to Management Question 1 above, applied at the component, facility, system, and/or site scale; and • Condition assessments at the component, facility, system, and/or site scale.

Table 8.d.2 LID Monitoring Intensities and Parameters

Countywide Stormwater Program	Anticipated Type(s) of LID Facilities Monitored	Total Minimum Number of Water Quality Sample Events During Permit Term (Annual Minimum) ⁴⁰	Parameters ^{41,42}
Alameda	High flow rate tree well filters and/or a combination of several LID measures.	25 (3)	<p>Required:</p> <ul style="list-style-type: none"> • Total Hg; • Total PCBs; • TSS • PFAS; • TPH; • Total and Dissolved Copper; • Flow; • Total Hardness; and • pH. <p>Optional:</p> <ul style="list-style-type: none"> • Other emerging contaminants;⁴³ and • Other ancillary parameters.⁴⁴
Contra Costa	Bioretention and/or other infiltration-based LID measures.	25 (3)	
San Mateo	Regional multi-benefit stormwater capture facility(s).	25 (3)	
Santa Clara	Bioretention and/or other LID measures.	25 (3)	
Solano	Bioretention and/or other LID measures.	12 (1)	

⁴⁰ This column indicates the total minimum number of sample events that must take place during the Permit term, and the minimum number of sample events that must take place during each year of the Permit term. Samples shall be collected via automated sampler as flow-weighted composite event mean concentrations (EMCs); time-weighted composites are allowed if they have many subsamples and can be closely approximated as flow-weighted composites. In order to assess performance, each sample event must include simultaneous sampling of the influent and effluent. The Permittees are encouraged to additionally collect sediment samples (e.g., to analyze for total PCBs and total mercury), however such sediment sample collection shall not count towards the required water quality samples specified in this column. The LID Monitoring Plans shall propose how to address both of the Management Questions, by specifying the locations of sampling stations, the matrix (surface water, bedded sediment, etc.), the number of samples to be collected at each site each year in the dry season versus in the wet season, and analytical methods.

⁴¹ Each flow-weighted (or time-weighted) composite EMC sample shall be analyzed for all of the required parameters listed in this column. LID Monitoring Plans may include additional parameters not listed in this column.

⁴² Data must be SWAMP comparable.

⁴³ Other emerging contaminants may include but are not limited to: microplastics and tire compounds such as 6PPD-quinone.

⁴⁴ Other ancillary parameters may include, but are not limited to: zinc (and other metals), temperature, conductivity, polycyclic aromatic hydrocarbons (PAHs), turbidity, pathogens (FIB), total methylmercury, total organic carbon (TOC), dissolved organic carbon (DOC), pesticides of concern to water quality (e.g., pyrethroids, fipronil and its degradants, and neonicotinoids such as imidacloprid), major cations (Ca, Mg, Na, K), and major anions (SO₄, Cl).

C.8.e. Trash Monitoring

Trash Monitoring is intended to: 1) verify whether Permittees' trash control actions to-date have effectively prevented trash from their jurisdictions from discharging to receiving waters, and 2) evaluate whether discharges of trash from areas of Permittees' jurisdictions where full trash capture equivalency (full trash capture devices or other actions verified with on-land visual trash assessments, as referenced in Provision C.10.b.iii) has been achieved are causing and/or contributing to adverse trash impacts in receiving waters.

Trash monitoring shall address the following management and monitoring questions:

Management Questions

- Have Permittees' trash management actions effectively prevented trash from their jurisdictions from discharging to receiving waters?
- Are discharges of trash from areas within Trash Management Areas controlled to a low trash generation level causing and/or contributing to adverse trash impacts in receiving waters?

Monitoring Questions

- What is the trash condition and approximate level of trash (volume, type, and size) within and discharging into receiving waters in areas that receive MS4 runoff controlled to a low trash generation via the installation of full trash capture devices, or the implementation of other trash management actions equivalent to full trash capture systems?
- Does the level of trash in the receiving water correlate strongly with the conditions of the tributary drainage area of the MS4?

i. Monitoring Components

Permittees shall implement or cause to be implemented the monitoring components as described below, to address each management and monitoring question. Permittees should use comparable assessment methods to facilitate regional consistency.

To ensure comparable data, for each monitoring site, Permittees and the TAG shall consider incorporating the implementation of steps 1-6 as specified in the Statewide Trash Monitoring Methods Project Trash Monitoring Playbook⁴⁵ into the Trash Monitoring Plan. Permittees and the TAG shall consider adapting and repeating these six steps for all methods specified in Provision C.8.e.ii, to

⁴⁵ <https://sites.google.com/sfei.org/trash>

reflect site information that can be collected regardless of method and can increase comparability between methods. The six steps are as follows:

- (1) Event Preparation
- (2) Gather Standard Equipment
- (3) Set up the Assessment Area
- (4) Record the Site Information and Assessment Area Dimensions
- (5) Record Assessment Area Photographs
- (6) Determine, Document, and Map the Locations of Storm Drain Outfalls, Homeless Encampments, and Illegal Dumping Hotspots Which May Impact the Assessment Area.

ii. Monitoring Methods

- (1) Permittees shall collect and analyze the amount of trash discharged from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system.

Sampling of MS4 outfalls includes the use of netting devices attached to the end of the outfall pipe (that capture trash discharging through the MS4), or other equivalent end-of-pipe (or in-line) devices and structures, whether existing, modified, or new. The device used to monitor the trash at the end of the MS4 outfall (or in-line, within the MS4) shall not be used itself as the trash control that grants the Low trash generation status to the tributary drainage area; the monitored tributary drainage area may only be controlled to the Low trash generation level by controls upstream of the monitoring device.

- (2) Permittees shall implement a pilot program to directly (in-stream) sample sections of receiving waters that receive runoff primarily from MS4 outfalls that drain tributary drainage areas controlled to the Low trash generation level, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system. Permittees should not select in-stream sites that are downstream of direct discharge sites (e.g., homeless encampments and illegal dumping sites).

To the extent feasible, in-stream monitoring sites should be co-located with MS4 outfall monitoring sites, as follows: They should be no further than 300 feet downstream or upstream of them; failing that, they should be no further than 300 feet downstream of them, or, any distance upstream of them; failing that, they should be anywhere within the same receiving

water; failing that, in-stream monitoring sites do not have to be co-located with MS4 outfall monitoring sites.

Sampling a receiving water directly (in-stream) involves the use of trawls, nets, or other equivalent devices, that are designed to capture as much of the width and depth of the receiving water's cross section (especially the thalweg) as is feasible and safe, during storm events that will (or that Permittees estimate are likely to) result in discharges of trash through the MS4 system.

Indirect methods (on-land), such as shoreline and/or streambank assessments, are not a satisfactory surrogate or replacement for these direct measurements of trash within receiving waters.

- (3) Permittees may additionally implement shoreline and/or streambank assessment methods (with an appropriate frequency, timing, and assessment length), not to indirectly measure trash loading in MS4 outfalls and receiving waters, but instead to gain a synoptic view of on-land trash conditions adjacent to MS4 outfall and in-stream monitoring sites. Such methods include: the riverine volumetric method, the riverine quantitative tally method, the unoccupied aerial system (UAS) method,⁴⁶ or other equivalent methods. The riverine qualitative visual assessment method may be merited but requires additional study, refinement, and calibration, and its use is subject to the Executive Officer's approval.
- (4) In order to be able to characterize loading rather than only concentration, Permittees shall directly measure flow at both MS4 outfall sites (flow through the MS4 pipe) and at in-stream receiving water sites (flow through the receiving water). Examples of methods to collect flow data include stream gages, manning's equation, and other methods recommended in Chapter 3.2 of the International Stormwater BMP Database's October 2009 Urban Stormwater BMP Performance Monitoring document.⁴⁷
- (5) All methods shall include collection of data on material type. For example, the volume or tally of cigarette butts collected.

⁴⁶ <https://sites.google.com/sfei.org/trash>

⁴⁷ <https://bmpdatabase.org/monitoring>

iii. Monitoring Sites, Events, Frequency, and Intervals

- (1) Permittees shall conduct MS4 outfall monitoring annually, starting October 1, 2023, at no less than the number of sites and events specified in the table below, according to the approved or conditionally approved Trash Monitoring Plan.

County	MS4 Outfall Monitoring	
	Minimum Number of Sites	Minimum Number of Wet Weather Monitoring Events
Alameda	3	3
Contra Costa	2	3
Solano	1	3
San Mateo	2	3
Santa Clara	3	3

- (2) Permittees shall implement a pilot program for direct in-stream monitoring. Permittees shall conduct this monitoring annually, starting October 1, 2024, at no less than the number of sites and events specified in the table below, according to the approved or conditionally approved Trash Monitoring Plan.

County	Direct In-Stream Monitoring	
	Minimum Number of Sites	Minimum Number of Wet Weather Monitoring Events
Alameda	2	3
Contra Costa	1	3
Solano	0	0
San Mateo	1	3
Santa Clara	2	3

- (3) Permittees should monitor storm events that trigger trash discharge and transport trash through the MS4 (e.g., 0.25 inches of rain over 24 hours), and that are preceded by at least 48 hours of limited or no trash discharge from the tributary drainage area. Each wet season, Permittees should sample the first forecasted significant storm event, and at least one storm event that is forecast to be greater than the one-year, one-hour storm event (i.e., full capture design standard).
- (4) To the extent possible, Permittees should monitor the same monitoring sites during each year of the Permit term. With cause, justification, and reporting in the Annual Trash Monitoring Progress Report, they can change monitoring sites.
- (5) Tributary drainage areas to monitoring sites should be representative with respect to the types of trash controls present across the region.

For example, some monitoring sites receive runoff from areas controlled primarily by one type of full trash capture device (e.g., an inlet-based device) while other monitoring sites receive runoff from areas controlled primarily by another type of full trash capture device (e.g., a HDS unit). And/or, some monitoring sites receive runoff from areas controlled primarily by full trash capture devices while other monitoring sites receive runoff from areas controlled primarily by Other Actions.

- (6) Permittees are exempt from outfall and receiving water sampling during dangerous and unsafe weather conditions.
- (7) In a given water year, if there are not enough qualifying storm events for Permittees to sample (i.e., due to weather/climate) – or if safety concerns preclude sampling during a qualifying storm event such that Permittees would not achieve the mandatory minimums set forth in Provisions C.8.e.iii.(1)-(2) – the Permittees may certify that in their subsequent Annual Trash Monitoring Progress Report, and perform the missed sample events in the subsequent water year.
- (8) Permittees shall use the results of Trash Monitoring to inform and investigate their trash management actions. If Trash Monitoring results indicate that discharges are causing or contributing to adverse impacts in receiving waters, Permittees shall implement new or enhanced actions to comply with the trash discharge prohibition and receiving water limitations. Examples of results that could trigger follow up actions are provided in the Fact Sheet.

iv. Regional Trash Monitoring Technical Advisory Group

- (1) To assist with the development and implementation of scientifically-sound trash monitoring, the Permittees shall form and convene a Technical Advisory Group (TAG), which includes impartial science advisors (e.g., SFEI) and Water Board staff, to review and provide input on ongoing trash monitoring, site selection, analysis methods, results, and conclusions.

Prior to the submission of the Trash Monitoring Plan, the TAG shall meet at least biannually. Subsequent to the submission of the Trash Monitoring Plan, the TAG shall meet at least annually.

- (2) The Permittees shall solicit input and feedback from the TAG on:
 - (a) The spatial representativeness of each site;
 - (b) The adequacy of the methods employed at each site;
 - (c) The recommended minimum intensity, size, and/or recurrence interval for storms that are sampled;
 - (d) The number of sites and monitoring events, as described in the monitoring schedule in the Trash Monitoring Plan;
 - (e) The timing of sampling during storm events. For example, it is likely that Permittees should prioritize sampling during the rising limb of the hydrograph (and towards the beginning of the rising limb, at that), because that is when most of the trash load is mobilized and discharged to MS4 outfalls and receiving waters;
 - (f) Implementation of Provision C.8.e.iii.(8);
 - (g) Permitting; and
 - (h) Recommendations for alternative approaches to answering the management and monitoring questions.

v. Trash Monitoring Plan - Permittees shall collectively submit a Trash Monitoring Plan by July 31, 2023, subject to Executive Officer approval, that, at a minimum, includes the following information:

- (1) Selected site locations (latitudinal and longitudinal coordinates), including maps and characteristics (e.g., type of outfall, receiving water);
- (2) For each site, describe the land use, trash conditions/levels, trash controls present, and other relevant characteristics (trash generation rates, types of controls present, etc.) of the tributary drainage areas of the MS4, and also delineate the tributary drainage areas of the MS4;

- (3) A description of factors that were considered when selecting monitoring sites and events, including spatial and temporal representativeness;
- (4) For each site, a description of the monitoring methods and protocols that will be used;
- (5) A monitoring schedule, which shall include the timing (of sampling during and between storm events), number and type of monitoring events at each site;
- (6) Plans for implementation of Provision C.8.e.iii.(8);
- (7) A summary of permitting efforts;
- (8) Opportunities provided for input and participation by interested parties and scientific experts other than those participating in the TAG; and
- (9) Input, feedback, and recommendations from the TAG on the capacity of the Trash Monitoring Plan to answer the management and monitoring questions.

C.8.f. Pollutants of Concern Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of select POCs to the Bay from local tributaries and urban runoff, provide information to assess compliance with receiving water limitations, support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.

In particular, monitoring required by this provision must be directed toward addressing the following six priority POC management information needs:

- (1) **Source Identification** - identifying or confirming which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
- (2) **Contributions to Bay Impairment** - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
- (3) **Management Action Effectiveness** - evaluating the effectiveness or impacts of existing management actions, including compliance with TMDLs and other POC requirements and providing support for planning future management actions;

- (4) **Loads and Status** - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges;
- (5) **Trends** - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time; and
- (6) **Compliance with Receiving Water Limitations** – providing information to assess whether receiving water limitations (RWLs) are achieved.

Not all information needs apply to all POCs (see Table 8.2 below for details).

- i. **Sampling Methods** – The Permittees shall implement or cause to be implemented the monitoring components shown in Table 8.1 to address each of the six POC management information needs.

Table 8.1 POC Monitoring Methods

Monitoring Type	Information Need	Monitoring Methods
1	Identify Source Areas	<p>Monitoring methods to identify watershed sources of POCs shall include:</p> <ul style="list-style-type: none"> • Collection and analysis of POCs (in dissolved phase or on suspended sediment particles as appropriate for pollutant) in urban stormwater runoff transported through MS4s or receiving waters during stormwater runoff events; or • Collection and analysis of POCs (in dissolved phase or on suspended sediment particles as appropriate for pollutant) in urban stormwater runoff at outfall locations (i.e., as runoff from MS4 enters receiving waters) during stormwater runoff events; or • Collection and analysis of POCs on bedded sediments deposited in MS4s, treatment facilities, or receiving waters; or • Collection and analysis of POCs in stormwater runoff or bedded sediments on source area properties (e.g. private property) or public rights of way; or • Other monitoring methods designed to identify specific sources or uses of POCs (e.g., caulk in roadways or building materials) or watershed source areas.
2	Identify watershed areas contributing most to Bay impairment	<p>Monitoring methods to identify watershed areas contributing most to Bay impairment shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1; or • Collection and chemical analysis of small fish tissue (or other relevant indicator) near tributary confluences with the Bay; or • Collection of bedded sediments near tributary confluences with the Bay and analysis for POCs.
3	Effectiveness of, and provide support for future, management actions	<p>Monitoring methods to evaluate effectiveness of, and provide support for future, management actions shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, but focused on characterizing the effectiveness of specific management actions in reducing or avoiding POCs in MS4 discharges; or • Collection of information to characterize or develop models of control measure performance

Monitoring Type	Information Need	Monitoring Methods
		(e.g., treatment controls, demolition debris program, green infrastructure, etc.). This information could include data for model calibration and validation, or other information needed to estimate or compute model parameters.
4	Provide information on POC loads, concentrations, or presence/absence	<p>Monitoring methods to provide information on POC loads, concentrations, or presence/absence shall include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, in combination with quantitative modeling associated with quantifying POC loads from MS4s or small tributaries to the Bay; or • Collection of information to support development of conceptual models of watershed fate and transport; or • Collection of information to support watershed loading models such as data for model calibration and validation or other information needed to estimate or compute model parameters.
5	Evaluate POC trends	Monitoring methods to provide information on trends in POC loads and concentrations over time shall include methods described for Monitoring Type #1 or #2
6	RWLs Assessment	<p>Monitoring in receiving waters to assess compliance with RWLs. Monitoring methods shall include:</p> <ul style="list-style-type: none"> • Collection and analysis of analytes during the wet season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by urban stormwater runoff. • Collection and analysis of analytes during the dry season in receiving waters (i.e., creeks and rivers that flow to San Francisco Bay) influenced by dry season urban runoff. • Sampling locations for RWLs assessment monitoring shall be spatially and temporally representative of the sampled waterbody. Sampled waterbodies shall be representative of the range of receiving waterbody types.

- ii. **Parameters and Monitoring Frequency** – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in Table 8.2. Monitoring frequencies are described as the total and minimum number of samples that Permittees within a countywide Stormwater Program shall collectively collect and analyze in a Water Year (October 1- September 30). Minimum number of samples that Permittees within a countywide Stormwater Program shall collect by the end of the Permit term to address each monitoring type are also specified.

Table 8.2 POC Monitoring Parameters, Effort and Type

Pollutant of Concern	Total Samples^a Collected /Analyzed (yearly minimum) for each Countywide Program: Alameda, Contra Costa, Santa Clara, and San Mateo	Minimum Number of Samples for each Monitoring Type^b
Polychlorinated Biphenyls (PCBs)	75 (8) Alameda, Santa Clara 65 (8) Contra Costa, San Mateo	8 samples minimum for monitoring types 1-3 and 16 samples minimum for monitoring types 4-5
Total Mercury	60 (8) Alameda, Santa Clara 50 (8) Contra Costa, San Mateo	8 samples minimum for monitoring types 1-5
Copper	5	all samples for monitoring type 4
<p>Emerging Contaminants^c Must include but not limited to:</p> <ul style="list-style-type: none"> • contaminants likely in stormwater and associated with vehicles; • per- and polyfluoroalkyl substances (PFAS); • organophosphate ester plastic additives/flame retardants; • bisphenol plastic additives; and • ethoxylated surfactants 	25 See footnote c	all samples for monitoring type 4 See footnote c
<p>Ancillary Parameters^d:</p> <ul style="list-style-type: none"> • Total organic carbon • Suspended sediments (SSC) • Hardness 	as necessary to address management questions for other POCs – see footnote d	
RWLs Assessment: copper, zinc, fecal indicator bacteria, and additional analytes determined under Provision C.8.h.iv	4 wet season samples 1 dry season sample	5 samples for monitoring type 6

^a This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.1), that must be collected during the Permit term. The number in parentheses indicates the minimum number of samples that must be collected, across all applicable monitoring types, during each of the five years of the permit. For example, 75 total samples must be collected for total PCBs and 60 total samples for mercury by each set of Santa Clara County and Alameda County during the term of the permit. San Mateo and Contra Costa Counties, because of smaller program size, must collect 65 PCBs and 50 total samples for mercury. Permittees must collect a minimum of 8 PCBs and 8 mercury samples every year of the Permit term, including the final year. It is possible that data can satisfy multiple monitoring types. However, the intent of the Permit is to achieve a distribution of monitoring effort across all applicable monitoring information needs. Therefore, no more than 25 percent of samples for any pollutant may be used to satisfy requirements for multiple monitoring categories for that pollutant. This requirement is intended to ensure that monitoring is focused to provide the best information to answer specific management questions.

^b This column indicates the monitoring types from Table 8.1 that are applicable to this POC along with the minimum number of samples that shall be collected by each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) by the end of the Permit term. The applicable monitoring type(s) is also stated to illustrate the management information need(s) motivating the collected data. For example, each set of Permittees (i.e., the Countywide Programs for Santa Clara, San Mateo, Alameda, and Contra Costa counties) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.1 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

^c Permittees, collectively, shall produce or cause to be produced a stormwater monitoring strategy for emerging contaminants (ECs) April 1, 2023 that prioritizes ECs for stormwater monitoring listed in this table and possibly others and establishes an approach for sampling stormwater ECs based on specific or likely physico-chemical properties, sources, transport pathways, and fate of prioritized ECs. Permittees must conduct or cause to be conducted ECs stormwater monitoring to execute the ECs stormwater monitoring strategy at a level of effort indicated in the table. This level of effort can be satisfied either through sampling and analysis of the number of samples indicated in this table or through augmentation of the San Francisco Bay Regional Monitoring Program Emerging Contaminants Monitoring Strategy in the amount of \$100,000 per year for all Permittees combined.

^d Total Organic Carbon (TOC) data are not used independently. Rather, TOC can be useful for normalizing PCBs data collected in water and sediment. TOC shall be collected concurrently with PCBs data that should be normalized to TOC. Similarly, suspended sediment concentrations (SSC) samples should be collected and analyzed when water samples are collected that will be used to assess loads, loading trends, or BMP effectiveness for PCBs and Mercury. Hardness data are used in conjunction with copper concentrations collected in fresh water.

- iii. **POC Parameters and Analytical Methods** – Samples collected consistent with Table 8.2 shall be analyzed for parameters listed in Table 8.3. Where no laboratory method is listed in Table 8.3, Permittees shall use U.S. EPA or SWAMP-approved methods. There are no analytical methods listed in Table 8.3 for ECs as there are not U.S. EPA-approved methods for most of these contaminants. Monitoring for ECs is investigatory monitoring to provide information on EC loads, concentrations, and presence/absence rather than compliance determination. Accordingly, specification of analytical method is not mandatory. Moreover, the sampling and analysis is likely to be conducted through the San Francisco Bay Regional Monitoring Program, which has a robust and well-established quality assurance process, and the laboratories chosen for the EC analyses will be applying state-of-the-science analytical methods for the detection and quantification of ECs in stormwater samples.

Table 8.3 POC Analytes and Analytical Methods

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs	U.S. EPA 1668 (RMP 40)
		Total Organic Carbon	SM5310B
		Suspended sediments (SSC)	ASTM D3977-97
	Bedded Sediment	Total PCBs	As appropriate to address the management information need: U.S. EPA 1668 (RMP 40), 8082A, or 8270D modified by Method 1625
Total organic carbon		U.S. EPA 9060	
Mercury	Water	Total Mercury	U.S. EPA 1631 Rev E
	Bedded Sediment	Total Mercury	U.S. EPA 7473
Copper	Water	Total Copper	U.S. EPA 200.7
		Dissolved Copper	U.S. EPA 200.8
		Hardness	U.S. EPA 130.1 or 130.2

C.8.g. Pesticides and Toxicity Monitoring

Permittees shall conduct wet and dry weather monitoring of pesticides and toxicity in urban creeks. If a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the Permit term, Permittees may request the Water Board modify, reduce or eliminate this monitoring requirement, provided the resultant change would result in overall improvement of pesticide monitoring data collection.

In fulfilling the requirements of Provision C.8.g, Permittees may collaborate with the California Department of Pesticide Regulation (CDPR) for data collection and analysis. For data collected through such collaboration, CDPR's standard operating procedures and quality assurance/quality control methods

may be used in place of the SWAMP comparability requirements in subprovisions C.8.b and in C.8.g.

i. Toxicity in Water Column - Dry Weather

- (1) Field and Laboratory Method – Permittees shall collect grab samples of receiving water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed, and by the methods described, in Table 8.4.

Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.⁴⁸ Each sample shall be subject to determination of “Pass” or “Fail” and shall indicate “Percent Effect” from toxicity using nondiluted samples. The TST null hypothesis shall be “mean sample response $\leq 0.75 \times$ mean control response.” A test result that rejects this null hypothesis shall be reported as “Pass.” A test result that does not reject this null hypothesis shall be reported as “Fail.” The relative “Percent Effect” of the sample is defined and reported as: $((\text{Mean control response} - \text{Mean sample response}) \div \text{Mean control response}) \times 100$.

- (2) Sample Design/Locations – Sample locations may be selected by Permittees to monitor locations where toxicity could be likely; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.
- (3) Frequency, Timeframe and Number of Sites – Permittees shall annually collect in the dry season at least the minimum number of samples as shown below.

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

⁴⁸ National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.

Table 8.4 Water Column Aquatic Toxicity Analytical Procedures

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
Pimephales promelas (Fathead Minnow)	Larval Survival and Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 ⁴⁹ EPA 833-R-10-003 ⁵⁰
Ceriodaphnia dubia (Freshwater Crustacean)	Survival ^a	Pass or Fail, % Effect <25% Passes, >25% Fails	EPA-821-R-02-013 EPA 833-R-10-003
Ceriodaphnia dubia (Freshwater Crustacean)	Reproduction	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Selenastrum capricornutum (Green Algae)	Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Hyalella azteca (Freshwater Amphipod)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 ⁵¹ EPA 833-R-10-003
Chironomus dilutus (midge)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 EPA 833-R-10-003

^a The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t-test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."

^b For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.

⁴⁹ Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.

⁵⁰ National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003) 2010.

⁵¹ *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H.azteca* and *C.dilutus* methods.

ii. Toxicity, Pesticides and Other Pollutants in Sediment - Dry Weather

- (1) Field and Laboratory Method – The Permittees shall collect grab samples of creek sediment using applicable SWAMP-comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.5. Where no laboratory method is listed in Table 8.5, Permittees shall use U.S. EPA- or SWAMP-approved methods.
- (2) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, or to resample a location where toxicity has been found in the past, for example.

Table 8.5 Sediment Toxicity & Pollutants Analytical Procedures

Test Species or Pollutant	Units	Laboratory Method
Hyalella azteca and Chironomus dilutus survival ^a	Pass/Fail using TST, % Effect ^a	EPA-600/R-99-064 ⁵²
Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin		EPA 3540C followed by EPA 8270D by NCI-GCMS
Fipronil and its degradates (fipronil-sulfone, fipronil-desulfinyl, fipronil sulfide)		
Total PAHs		
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc		
Total organic carbon		
Grain size		

^a For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

⁵² *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA 600/R-99-064) Second Edition. March 2000.

- (3) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.
- (4) Frequency, Timeframe, and Number of Sites – Permittees shall collect at least the minimum number of samples annually as shown:

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

iii. Wet Weather Pesticides and Toxicity Monitoring

- (1) Field and Laboratory Method – Permittees shall collect water column samples and analyze them for the following parameters using the methods specified in Tables 8.4 and 8.5. For imidacloprid, Permittees shall specify an analytical method that achieves a reporting level of 0.01 ppb.
- Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
 - Imidacloprid
 - Fipronil and its degradates fipronil-sulfone, fipronil-desulfinyl, fipronil sulfide and fipronil amide (amide is optional - do it if lab offers the suite)
 - Toxicity
- (2) Sample Design/Locations – Permittees shall collect samples annually during storm events. Sample locations shall be representative of urban watersheds (i.e., bottom of watershed locations).
- (3) Frequency, Timeframe, and Number of Sites – If this (Provision C.8.g.iii) sampling is conducted by the RMC on behalf of all Permittees, a total of ten (10) samples shall be collected over the Permit term, with a minimum

of six (6) samples collected by the end of the third water year of the permit term. If this (Provision C.8.g.iii) sampling is conducted by Countywide Stormwater Programs, Permittees shall collect at least the minimum number of samples as shown below:

Permittees	Minimum Number of Sample Sites
Alameda County Permittees	2 per year
Santa Clara County Permittees	2 per year
Contra Costa County Permittees	1 per year
San Mateo County Permittees	1 per year
Solano County Permittees	1 by the end of water year 2023-24

iv. Follow-up – Permittees shall provide notification in the next Urban Creeks Monitoring Report when analytical results indicate any of the following:

- (1) A toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, follow-up sampling, and both have $\geq 50\%$ Percent Effect;
- (2) A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan; or
- (3) For pollutants without water quality objectives, results exceed Probable Effects Concentrations or Threshold Effects Concentrations.⁵³

C.8.h. Reporting

i. Water Quality Standard Exceedance – When data collected pursuant to Provisions C.8.a.-C.8.g. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a follow-up report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are addressed pursuant to

⁵³ TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31. More recent TECs and PECs may be used if lower than stated in MacDonald 2000.

Provisions C.9 through C.12, C.14, C.18, and C.19, consistent with Provision C.1.

ii. Electronic Reporting – The Permittees shall submit to the California Environmental Data Exchange Network (CEDEN) all results from monitoring conducted pursuant to Provisions C.8.d. LID Monitoring, C.8.e Trash Monitoring, C.8.f Pollutants of Concern Monitoring, and C.8.g. Pesticides and Toxicity Monitoring. Data that CEDEN cannot accept are exempt from this requirement.

(1) Data shall be submitted in SWAMP formats and with the quality controls required by CEDEN.

(2) Data collected during the previous October 1–September 30 period shall be submitted by March 31 of each year.

iii. Urban Creeks Monitoring Report – The Permittees shall submit a comprehensive Urban Creeks Monitoring Report at the countywide level no later than March 31 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Each Urban Creeks Monitoring Report shall contain summaries of C.8.d LID Monitoring, C.8.e Trash Monitoring, C.8.f Pollutants of Concern Monitoring, and C.8.g Pesticides and Toxicity Monitoring, including the following:

(1) **A LID Monitoring Status Report**, which, at a minimum, includes the following information:

(a) A summary of the LID Monitoring Methods and study designs used in the preceding water year, at each sampled LID component, facility or system.

(b) A summary table that lists monitoring samples collected during the preceding water year during the Permit term, including at a minimum, the following information for each sample location: Site ID; the name or ID of the LID component, facility or system name; latitude and longitude of the LID component, facility or system; type of LID component, facility or system (e.g., bioretention); characteristics and land use of the tributary drainage area of the LID component, facility or system; other management actions and controls present in the tributary drainage area of the LID component, facility or system; sample dates; and concentrations of parameters measured.

(c) A summary of lessons learned, progress made, and interim conclusions, for all samples collected during the previous water year.

(d) For all data generated during the preceding water year, a statement of data quality.

- (e) The raw data generated by the preceding water year, made available to the Water Board and third parties.
- (f) An outline of steps (including but not limited to study designs, methods and sites) for the upcoming water year.
- (g) An analysis of the data, including the following:
 - (i) Identification and analysis of any trends in stormwater or receiving water quality.
 - (ii) A discussion of the data for each monitoring program component, which includes:
 - a. Monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, the California Toxics Rule, and other applicable water quality control plans;
 - b. Where appropriate, hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - c. Identification and prioritization of water quality problems;
 - d. Identification of potential sources of water quality problems;
 - e. Description of follow-up actions;
 - f. Evaluation of the effectiveness of existing control measures; and
 - g. Identification of management actions needed to address water quality problems.

(2) An Annual Trash Monitoring Progress Report,⁵⁴ which, at a minimum, includes the following information:

- (a) Narrative description of monitoring conducted, including the number of sites monitored and the number of monitoring events completed;
- (b) Description of storms events that were sampled, including the date(s) and times when samples were collected, intensity and duration of the storm event, a description of where along the hydrograph the storm event was sampled, and justification used to determine the storm event was of appropriate size to displace and/or mobilize the transport of trash through the MS4 system;

⁵⁴ The Annual Trash Monitoring Progress Report shall be a single collective regionwide report. With their UCMRs, all Permittees shall include a copy of the Annual Trash Monitoring Progress Report.

- (c) Narrative description, including maps, of any MS4 outfalls, homeless encampments and illegal dumping sites, located upstream of each Outfall Monitoring sample site;
 - (d) Description and the results of data analysis methods, including statistical analyses;
 - (e) Results and lessons learned;
 - (f) Data quality assurance procedures that were implemented for samples collected;
 - (g) Monitoring events (including locations and methods) planned for the subsequent fiscal year(s);
 - (h) A comprehensive detailed discussion of implementation of Provision C.8.e.iii.(8); and
 - (i) Updates of required Trash Monitoring Plan elements.
- (3) **A Pesticides and Toxicity Monitoring Status Report**, which includes the following information:
- (a) A complete Water Year Summary Table that lists the monitoring sites, with a row for each site. The table columns contain: Site ID; creek name; latitude; longitude; permittee jurisdiction(s); water column toxicity (acute); water column toxicity (chronic); sediment toxicity (acute); sediment toxicity (chronic); and sediment chemistry. For each site, list the site information and check the parameters sampled at that site. Provide a statement of the data quality and an analysis of the data, including:
 - (i) Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, Ocean Plan, and California Toxics Rule and other applicable water quality control plans;
 - (ii) Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - (iii) Identify and prioritize water quality impairments;
 - (iv) Identify and potential sources (and actual, if known) of water quality impairments, and provide sufficient justification for those potential sources;
 - (v) Describe follow-up actions;
 - (vi) evaluate the effectiveness of existing management actions; and

- (vii) identify additional management actions needed to address water quality impairments.

iv. Pollutants of Concern Monitoring Reports

- (1) In each Urban Creeks Monitoring Report, the Permittees shall submit a report describing the allocation of sampling effort for POC monitoring for the forthcoming year (i.e., the water year that began October 1 of that year) and what was accomplished for POC monitoring during the preceding water year. The report shall include (for preceding year and projected for forthcoming year): monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured. Any data not reportable to CEDEN should also be included in the Urban Creeks Monitoring Report due annually on March 31.
- (2) Receiving Water Limitations Assessment Report
 - (a) By no later than March 31, 2023, Permittees shall submit a report with the following information:
 - (i) Relevant water quality objectives against which to compare monitoring data;
 - (ii) Analytes in addition to those listed in Table 8.2 to monitor based on assessment of the potential that discharges of these analytes may result in levels in receiving waters approaching or exceeding water quality objectives and the basis of the determination; and
 - (iii) Identification of waterbodies to be sampled, sampling locations within those waterbodies, and sampling schedule consistent with the requirements in Tables 8.1 and 8.2.
 - (b) The report shall be subject to approval by the Executive Officer for compliance and technical adequacy. Upon approval by the Executive Officer, Permittees shall augment the RWLs assessment monitoring required in Tables 8.1 with the analytes identified in the report.
 - (c) By no later than March 31, 2026, or as part of the Integrated Monitoring Report, Permittees shall submit an updated Receiving Water Limitations Assessment Report with proposed monitoring to be conducted during the next permit term.

- v. Integrated Monitoring Report** – By no later than March 31, 2026, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Urban Creeks Monitoring Report. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit. The Integrated Monitoring Report

shall report on all the data collected since the previous Integrated Monitoring Report⁵⁵ and shall contain the following:

- (1) The information described in Provisions C.8.h.iii.(1)-(3), pertaining to the monitoring data collected during the preceding (third) water year of the Permit term;
- (2) A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report,⁵⁵ and may include other pertinent studies.

For LID Monitoring and Trash Monitoring, this shall additionally include a summary of the methods and study designs used in all preceding water years, at each sample location. And, a summary of lessons learned, progress made, data, results, analyses, and conclusions, for all samples collected during all prior water years during the Permit term;

- (3) For POCs, methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable;
- (4) A budget summary for each monitoring requirement (for each year of the Permit term); and
- (5) With cause and justification, recommendations for changes to any of the elements of Provision C.8 in future Permit terms.

vi. Comprehensive Bioassessment Final Report – By no later than March 31, 2024, the Permittees shall collectively submit a comprehensive analysis of all bioassessment monitoring conducted by the RMC during MRP 1 and MRP 2, for Water Years 2012-2021.

vii. Standard Report Content – All monitoring reports shall be clear, concise, and well-organized, and shall include the following information:

- (1) An Executive Summary;
- (2) The purpose of the monitoring and brief description of the study design rationale;
- (3) Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data;
- (4) Brief descriptions of sampling protocols and analytical methods;
- (5) Sample location description, including water body name and segment and latitude and longitude coordinates;

⁵⁵ Excluding Creek Status Monitoring conducted subsequent to the submittal of the Integrated Monitoring Report during the Previous Permit.

- (6) Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue);
- (7) Concentrations detected, measurement units, and detection limits;
- (8) Assessment, analysis, and interpretation of the data for each monitoring program component;
- (9) A listing of volunteer and other non-Permittee entities whose data are included in the report; and
- (10) Assessment of compliance with applicable water quality standards.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses, within their jurisdictions, their own and others' use of pesticides that pose a threat to water quality and that have the potential to enter the municipal conveyance system.

This provision implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide-related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. U.S. EPA phased out urban uses of diazinon in the mid-2000s, and diazinon is no longer detected in urban creeks in the region. Pesticide-related toxicity continues to occur because State and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. In adopting the TMDL implementation plan, the Water Board recognized that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and State law; and (2) because a realistic date for achieving allocations cannot be discerned given the current framework for pesticide regulation, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Urban-use pesticides of concern (Pesticides of Concern) to water quality include: diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); carbamates (e.g., carbaryl and aldicarb); and neonicotinoids (e.g., imidacloprid, acetamiprid, and dinotefuran).

C.9.a. Maintain and Implement an Integrated Pest Management Policy or Ordinance and Standard Operating Procedures

All Permittees have developed a pesticide toxicity control program for use of pesticides in municipal operations and on municipal property based on the concepts of Integrated Pest Management (IPM)⁵⁶ and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

⁵⁶ The Glossary attached to this Permit includes IPM definitions adapted from the draft UP Provisions.

- i. Task Description** – The Permittees shall implement their IPM policies or ordinances and standard operating procedures and update their IPM policies or ordinances and standard operating procedures as needed to ensure their use of pesticides does not cause or contribute to pesticide-related toxicity in receiving waters.
- ii. Implementation** – Each Permittee shall require municipal employees and contractors to adhere to its IPM policy or ordinance and standard operating procedures in all the Permittee’s municipal operations and on all municipal property.
- iii. Reporting**
 - (1) In each Annual Report, Permittees shall certify they are implementing their IPM policy or ordinance and standard operating procedures, report trends in quantities and types of pesticide active ingredients used, and explain any increases in use of Pesticides of Concern to water quality.
 - (2) In each Annual Report, Permittees shall provide a brief description (e.g., one or two sentences) of two IPM tactics or strategies implemented in the reporting year. Examples could include non-chemical strategies such as monitoring, mowing weeds, mulching, and redesign of problematic landscapes; preventive actions such as sealing holes and gaps in structures, improving sanitation, and outreach to employees about how their actions contribute to pest presence; and integration of several strategies, such as tackling a rat problem by educating building occupants, improving sanitation, trimming trees away from buildings, sealing holes in the structure, and trapping rodents. To the extent possible, different IPM actions should be described each year, so that a range of IPM actions is described over the permit term.
 - (3) In their 2023 Annual Reports, the Permittees shall provide links to their IPM policies or ordinances and IPM standard operating procedures. Permittees shall submit updated links in subsequent Annual Reports, if those links change.

C.9.b. Train Municipal Employees

- i. Task Description** – The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee’s IPM policy and/or ordinance and standard operating procedures. This training may also include other training opportunities, such as the ReScape California Maintenance Training & Qualification Program, provided both structural and landscape pest control training are provided.

ii. Reporting

- (1) In each Annual Report, Permittees shall report the percentage of municipal employees who apply pesticides who have received training in the Permittees' IPM policy and/or ordinance and IPM standard operating procedures within the last year. This report shall briefly describe the nature of the training, such as tailgate training provided by a Permittee's IPM coordinator, IPM training through the Pesticide Applicators Professional Association, etc.
- (2) The Permittees shall submit training materials (e.g., course outline, date, and list of attendees) upon request.

C.9.c. Require Contractors to Implement IPM

- i. **Task Description** – The Permittees shall include contract specifications requiring contractors to implement IPM, so that all contractors practice IPM on municipal properties. The Permittees shall monitor contractor pesticide applications to ensure that contractors implement their contract specifications in accordance with the Permittee's IPM policies and/or ordinances and standard operating procedures. Contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation. Similarly, IPM certifications awarded to a pest control company may not guarantee that an individual employee will always use IPM strategies. Thus, periodic Permittee observation and verification of contractor performance is necessary.
- ii. **Implementation** – Permittees shall periodically monitor their contractors' activities to verify full implementation of IPM techniques. This shall include, at a minimum, evaluation of lists of pesticides and amounts of active ingredient used.
- iii. **Reporting** – In each Annual Report, Permittees shall describe how they verified contractor compliance with IPM policies and any actions taken or needed to correct contractor performance.

C.9.d. Interface with County Agricultural Commissioners

- i. **Task Description** – The Permittees shall maintain communications with county agricultural commissioners to (a) get input and assistance on urban pest management practices and use of pesticides, (b) inform them of water quality issues related to pesticides, and (c) report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire (<https://www.cdpr.ca.gov/docs/legbills/calcode/040501.htm#a6970>).

- ii. **Reporting** – In each Annual Report, Permittees shall briefly describe the communications they have had with county agricultural commissioners and report follow-up actions to correct violations of pesticide regulations.

C.9.e. Public Outreach

- i. **Task Description** – Permittees shall undertake outreach programs to (a) encourage communities within the Permittee’s jurisdiction to reduce reliance on pesticides that threaten water quality; (b) encourage public and private landscape irrigation management that minimizes pesticide runoff; and (c) promote appropriate disposal of unused pesticides.

- ii. **Implementation** – The Permittees shall conduct each of the following:

- (1) **Point of Purchase Outreach:** The Permittees shall:

- Conduct outreach to consumers at the point of purchase;
- Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
- Participate in and provide resources for the “Our Water, Our World” program or a functionally equivalent pesticide use reduction outreach program.

- (2) **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).

- (3) **Outreach to Pest Control Professionals:** The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by EcoWise Certified or a functionally equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BAMSC; CASQA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.

- iii. **Reporting** – In each Annual Report, Permittees shall describe their actions taken in the three outreach categories above. Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that

respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted in each of the three categories, including level of effort, messages and target audience.

C.9.f. Track and Participate in Relevant Regulatory Processes

- i. Task Description** – The Permittees shall conduct the following activities, which may be done at a county, regional, or statewide level:
 - (1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
 - (2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
 - (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with WQS; and
 - (4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.
- ii. Reporting** – In each Annual Report, Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or statewide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged.

C.9.g. Evaluate Implementation of Pesticide Source Control Actions

- i. Task Description** – This task is necessary to gauge how effective the implementation actions taken by Permittees are in (a) achieving TMDL targets and (b) avoiding future pesticide-related toxicity in urban creeks. Once during the permit term, Permittees shall conduct a thoughtful evaluation of their IPM efforts, how effective these efforts appear to be, and how they could be improved.
- ii. Implementation** – The Permittees shall evaluate the effectiveness of the pesticide control measures implemented by their staff and contractors,

evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies), and identify additions and/or improvements to existing control measures needed to attain targets, with an implementation time schedule.

- iii. **Reporting** – In their 2025 Annual Reports, the Permittees shall submit this evaluation, which shall include an assessment of the effectiveness of their IPM efforts required in Provisions C.9.a-f (including the effectiveness of outreach efforts required by Provision C.9.e); a discussion of any improvements made in these efforts in the preceding five years; and any changes in water quality regarding pesticide toxicity in urban creeks. This evaluation shall also include a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term. Work conducted at the county or regional level shall be evaluated at that respective level; reiteration in individual Permittee evaluation reports is discouraged.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.1, for trash discharges, Discharge Prohibition A.2, and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems in accordance with the requirements of this provision. Flood management agencies are not subject to these trash reduction requirements except for those included in Provision C.10.c.

C.10.a. Trash Reduction Requirements

Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by June 30, 2025.

- i. **Schedule** - Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

- (1) 90 percent by June 30, 2023; and
- (2) 100 percent by June 30, 2025.

Permittees that do not attain the 90 percent compliance benchmark by June 30, 2023, shall submit a revised trash load reduction plan as described in Provision C.10.d and a schedule of implementation of additional trash load reduction control actions sufficient to achieve compliance with the 90 percent compliance benchmark within a reasonable timeframe, and the 100 percent compliance benchmark by June 30, 2025.

- ii. **Trash Generation Area Management** - Permittees shall demonstrate attainment of the Provision C.10.a.i trash discharges percentage-reduction requirements by management of mapped trash generation areas within their jurisdictions delineated on Trash Generation Area Maps included with their Long-Term Trash Reduction Plans, submitted in February 2014, in accordance with the requirements and accounting set forth in this provision. The February 2014 maps provide the 2009 trash levels and delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories:

- Low = less than 5 gal/acre/yr;
- Moderate = 5-10 gal/acre/yr;
- High = 10-50 gal/acre/yr; and
- Very High = greater than 50 gal/acre/yr.

Permittees also designated trash management areas on their February 2014 maps encompassing one or more trash generation areas, within which they will implement trash control actions. With the 2024 Annual Report, Permittees shall submit a revised Trash Generation Area Map that includes trash management areas, as well as private land drainage areas (See Provision C.10.a.ii.b) that will be retrofitted with full trash capture devices, or equivalent, by June 30, 2025. The updated trash generation map(s) shall include GIS layers and appropriate metadata (including tables etc.) that identify locations and associated drainage areas of full trash capture systems, and other trash control actions, and shall highlight any revisions or changes from the previous map(s). Permittees may provide access to multilayered GIS maps that account for other trash control action details and locations rather than submitting that information in a document. Maps and data generated through this effort may be used to illustrate progress toward achieving the trash reduction requirements in Provision C.10.a.i.

- (a) Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better.

A full capture device or system is a treatment control, or series of treatment controls, including, but not limited to, a multi-benefit project (as defined in the Trash Amendments) or a low-impact development control that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q , resulting from a one-year, one-hour storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain. The device(s) must also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events. Types of systems certified by the State Water Resources Control Board are deemed full capture systems. A stormwater treatment facility implemented in accordance with Provision C.3 is also deemed a full capture system if the facility, including its maintenance, prevents the discharge of trash to the downstream MS4 and receiving waters and discharge points from the facility, including overflows, are appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one-year, one-hour storm hydraulic specification.

Actions equivalent to full trash capture are actions that send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows. The Provision C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation by the Provision C.10.a.i mandatory deadlines.

- (b) By July 1, 2025, Permittees shall ensure that private lands that are moderate, high, or very high trash generating, and that drain to storm drain inlets that Permittees do not own or operate (private), but that are plumbed to Permittees' storm drain systems are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of actions equivalent to or better than full trash capture systems shall be assessed with visual assessments in accordance with Provision C.10.b.iii. If there is a full trash capture device downstream of these private lands that is designed, operated, and maintained to control trash discharges from that land area, no other trash control is required.

C.10.b. Demonstration of Trash Reduction Outcomes

- i. **Full Trash Capture Systems** – Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each full trash capture system, including the mapped location and drainage area served by each system. Permittees shall provide their respective vector control agencies with the names and locations of new and existing full trash capture devices.
 - (a) **Inspection and Maintenance** – Permittees shall inspect and maintain full trash capture devices to ensure that they are operating appropriately and have sufficient operating capacity to capture trash consistent with the requirements of this Provision. The inspection and maintenance of each full capture device shall be at a frequency sufficient to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash. At a minimum, all full trash capture devices shall be inspected and maintained once per year. In High and Very High trash generation areas, all full trash capture devices shall be inspected at least twice per year (and maintained as necessary), with the inspections spaced at least three months or more apart.

- (b) For catch basin insert type full capture systems, if any such device is found to have a plugged or blinded screen, or is 50 percent full or greater, during an inspection or a maintenance event, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor 50 percent or more full of trash at the next inspection or maintenance event. For high-flow capacity devices, if any such device is found to have a plugged or blinded screen, or exhibits a condition that exceeds the manufacturer's guidelines for requiring maintenance, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor exceeds the manufacturer's guidelines during the next inspection or maintenance event.
- ii. **Maintenance Records** – Permittees shall retain device-specific maintenance records, including, at a minimum: device type, date of installation, location, drainage area, date(s) of inspection and maintenance, the capacity condition of the device at the time of inspection and maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, any damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report and may be limited to the number of full capture devices maintained that exhibited a plugged, 50 percent or more full, or overflowing condition upon inspection or maintenance.
 - (a) **Certification** – Permittees shall certify annually that each full trash capture system is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation rate area.
- iii. **Other Trash Management Actions** – Permittees shall maintain, and provide for inspection and review upon request, documentation of non-full trash capture system trash control actions that verifies implementation of each action. Permittees shall also conduct assessment of the action that verifies effectiveness of the action or combination of actions and maintain, and provide for inspection and review upon request, documentation of assessments.
 - (a) **Implementation Documentation** – Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other

information relevant to effective implementation of the action or combination of actions.

(b) **Visual Assessment of Outcomes of Other Trash Management**

Actions – Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see Provision C.10.b.iii.(b)(iv)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:

- (i) Conduct observations of the sidewalk, curb and gutter within each trash management area, or locations associated with sources of trash.
- (ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles or at strategic locations, provided they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.
- (iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.
- (iv) Permittees may put forth substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Permittees shall submit such evidence to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these management actions at the specified performance standard.

iv. Percentage Discharge Reduction – Percentage discharge reduction from 2009 from Very High generation areas reduced to High, Moderate, and Low, High generation areas reduced to Moderate and Low, and Moderate trash generation areas reduced to Low trash generation category to meet the required total percent reduction (% Reduction) shall be calculated based on the following formula:

$$\% \text{ Reduction} = 100 [(12A_{VH(2009)} + 4A_{H(2009)} + A_{M(2009)}) - (12A_{vh} + 4A_h + A_M)] / (12A_{VH2009} + 4A_{H2009} + A_{M2009})$$

where:

$A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area

A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year

A_H = total amount of high trash generation category v jurisdictional area in the reporting year

A_M = total amount of moderate trash generation category jurisdictional area in the reporting year

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

100 = fraction to percentage conversion factor

v. Source Control – Permittee jurisdiction-wide actions to reduce trash at the source, particularly persistent trash items other than those addressed under previous Permits (foam foodware and single-use plastic bags) may be valued toward trash load reduction compliance by up to ten percent load reduction total for all such actions. To claim a load percentage reduction value, Permittees must provide substantive and credible evidence that new source control actions are being implemented jurisdiction-wide and reduce trash by the claimed value. A Permittee may support its claimed source reduction value with reference studies from other jurisdictions provided that it also provide credible evidence that the chosen source control action would achieve comparable trash reduction if implemented in the Permittee's jurisdiction.

A jurisdiction-wide source control load reduction value cannot be claimed after June 30, 2025. However, Permittees may demonstrate and claim full trash capture equivalence of a source control in specific trash generation areas or in combination with other controls in an area if the control or combination of controls are documented, assessed, and verified in accordance with Provision C.10.b.iii.

vi. Partial Trash Reduction – Curb Inlet Screens – Studies conducted by the Permittees during MRP 2 assessed the benefit of other control measures, such as curb inlet screens in combination with street sweeping, in reducing the amount of trash discharged through MS4s. However, additional information is needed to determine the effectiveness of curb inlet screens in reducing trash within a given trash management area. Permittees may demonstrate through further assessment and study, as described below, that the installation and appropriate maintenance of curb inlet screens, accompanied by street sweeping at an appropriate frequency, within Moderate trash generation areas can effectively reduce the trash generation rate to Low under the following conditions:

- (a) Permittees shall propose an acceptable method to verify that the area where curb inlet screens have been or will be installed are Moderate trash generating. Permittees shall also propose an appropriate method and frequency of verification, post installation, on the change (if any) in the trash generation rate following the installation of curb inlet screens.
- (b) Permittees shall propose an appropriate street sweeping frequency where curb inlet screens are installed that, when implemented, effectively reduces the area's trash generation rate to Low.
- (c) At a minimum, Permittees shall evaluate street sweeping effectiveness based on multiple factors other than frequency, and sufficient to allow a determination of proper and effective street sweeper access. Examples of additional evaluations that could be completed include effectiveness associated with enhanced street/curb accessibility via proper signage, ticketing, and towing vehicles when appropriate.
- (d) The inspection and maintenance of each curb inlet screen shall be conducted at a frequency sufficient to ensure the screen is functioning appropriately, e.g., a screen is not stuck in an open position or plugged, including plugging of the screen leading to opening of the screen under flows less than those described in Provision C.10.a.ii.(a).
- (e) Permittees shall propose an appropriate method of covering/blocking horizontal surface grates during street sweeping events (to prevent

trash from being swept into the grates), and an appropriate method for capturing smaller pieces of trash/debris from entering the MS4 via the horizontal surface grates.

- (f) Permittees shall submit the results of the additional study, as described above, for Executive Officer approval. The report must appropriately describe and demonstrate the conditions under which the combined use of curb inlet screens and street sweeping effectively reduce the trash generation rate of an area from Moderate to Low.

C.10.c. Requirements for Flood Management Agencies

Flood management agencies must continue to implement requirements for trash capture systems, as specified in Table 10-1, below. Flood management agencies must also implement trash control measures such as trash pickups and installation of trash receptacles, to control Moderate, High, and Very High trash generation areas within their jurisdiction including, but not limited to, parking lots, trailhead areas, and along recreational paths and trails, and demonstrate effectiveness of these trash control measures as specified in Provision C.10.b.iii.

Table 10-1. Requirements for Flood Management Agencies

Flood Management Agency	Trash Capture Requirement
Santa Clara Valley Water District	4 trash booms or 8 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda County Flood Control Agency	3 trash booms or 6 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda Co. Zone 7 Flood Control Agency	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Contra Costa County Flood Control Agency	2 trash booms or 4 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
San Mateo County Flood and Sea Level Rise Resiliency District	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Vallejo Flood & Wastewater District	1 trash boom or 2 outfall capture devices or equivalent measures (minimum 2 ft. diameter outfall)

C.10.d. Trash Load Reduction Plans

- i. Permittees shall maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the Provision C.10.a Trash Load Reduction requirements. A summary of any new revisions to the Plan shall be included in the Annual Report. The Plan shall describe trash load reduction control actions being implemented or planned and the trash generation areas or trash management areas where the actions are or will be implemented, including jurisdiction-wide actions such as source control ordinances. The Plans may include actions to control sources outside of the Permittees' jurisdictions that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees that choose to implement such control actions may account for them towards meeting the Provision C.10.a Trash Load Reduction requirements as long as they can demonstrate the controls will be sustained, and they quantify the sustained load reduction benefit (relative to control actions in the trash generation areas or trash management areas in their jurisdiction that drained to the affected receiving water).
- ii. Permittees shall calculate their trash load reduction, relative to 2009 baseline conditions, without the trash load reduction offsets described in Provision C.10.f, as of June 30, 2023. If that reduction is less than 90 percent, then Permittees shall develop and implement an updated Trash Load Reduction Plan. Pursuant to Provision C.22.c, the updated Trash Load Reduction Plan shall include a schedule of additional trash load reduction implementation actions sufficient to achieve compliance with the 90 percent compliance benchmark within a reasonable timeframe, and the 100 percent reduction from 2009 levels, achieved through implementation of full trash capture, or other equivalent actions, consistent with the requirements of this Provision, by June 30, 2025. Permittees shall submit their updated Trash Load Reduction Plans with their 2023 Annual Report.
- iii. Permittees unable to attain 100 percent trash load reduction, relative to 2009 baseline conditions, by June 30, 2025, while accounting for credits from new source controls (as described in Provision C.10.b.v) may be granted additional time until December 31, 2025, and East Contra Costa County Permittees until June 30, 2026, to achieve 100 percent reduction via full trash capture, or equivalent, contingent on developing and implementing an approved Direct Discharge Control Plan as described in Provision C.10.f.ii.

C.10.e. Impracticability Report

Permittees may collectively submit a programmatic report by March 31, 2023, for the approval of the Executive Officer, that describes conditions under which

it is impracticable to control trash via full trash capture devices. The impracticability report shall include, but not be limited to, the following:

- i. A description of the engineering constraints that prevent the installation of full trash capture devices.
- ii. A process for evaluating and determining impracticability of full trash capture devices.
- iii. Alternative Controls: The report shall include alternative controls or a combination of controls that may be implemented to reduce trash loads to meet the requirements and deadlines in Provision C.10.a. Examples of alternative controls include, but are not limited to, requiring businesses or property owners to pick up litter, successful implementation of excess trash receptacles and collection services, increased code enforcement or parking enforcement/ticketing/towing, additional trash pick-ups, street sweeping, assessment and execution of cooperative implementation opportunities with Caltrans or neighboring Permittees, curb inlet screens, and long term measures such as pump station or storm drain retrofits, implementation of green stormwater infrastructure that controls trash, or changes to the catchment to allow effective implementation of full trash capture measures.
- iv. Permittees shall use an approved trash impracticability report in developing the updated Trash Load Reduction Workplans required by Provision C.10.d.

C.10.f. Optional Trash Load Reduction Offset Opportunities

- i. **Creek and Shoreline Cleanup** – A Permittee may offset part of its Provision C.10.a trash load percent reduction requirement by conducting cleanup of creek and shoreline areas. The creek and shoreline cleanup efforts should be conducted at a minimum frequency of twice per year, and sufficient to demonstrate sustained improvement of the creek or shoreline area. The maximum offset that may be claimed is ten percent. Offsets for creek and shoreline cleanups will no longer be applicable after June 30, 2025.

A Permittee may claim a load reduction offset of one percent for the June 30, 2023 mandatory trash reduction compliance benchmark for each total of trash volume removed from cleanups that is ten percent of the Permittees' 2009 trash load volume estimates, based on its trash generation maps and average categorical trash generation rates (see Provision C.10.a.ii), in accordance with the following formula:

1% Reduction Offset (Volume) = $(12 + 4 A_{H(2009)} + A_{M(2009)}) OF$

where:

$A_{VH(2009)}$ = total amount of 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of 2009 moderate trash generation category jurisdictional area

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

OF = offset factor equal to (7.5×0.1) for the 2023 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

- ii. **Direct Trash Discharge Controls** – Permittees with an approved Direct Discharge Control Plan (DDCP) may claim up to fifteen percent using the Provision C.10.f.i formula towards offsetting their Provision C.10.a trash load percent reduction requirement. The DDCP shall include a detailed description of control measures the Permittee will implement to control the direct discharge of trash to receiving waters from non-storm drain system sources. Offsets for direct discharge controls will no longer be applicable after June 30, 2025.

Permittees wishing to submit a new DDCP pursuant to Provision C.10.d.iii shall submit the DDCP for approval no later than April 1, 2024. Permittees with an existing DDCP approved during the Previous Permit shall submit an updated DDCP for approval no later than January 3, 2023, in order to continue claiming trash load percent reduction offsets. DDCPs shall be sufficient to provide trash reduction benefits equivalent to or greater than the areas not yet in compliance, as calculated using the formula in Provision C.10.b.iv, and shall include:

- (a) A description of sources of the directly discharged trash;
- (b) A description of control actions that will be implemented during the permit term to prevent or reduce direct discharge trash loads, including those associated with unsheltered homeless populations and illegal dumping, in a systematic and comprehensive manner;
 - (i) For Permittees whose DDCPs address significant discharges from populations experiencing unsheltered homelessness,

systematic and comprehensive implementation of control actions shall include a commitment to, and a plan for, increasing the provision of emergency, transitional, and/or permanent housing, and the following services: trash and sanitary services, and other services which are necessary to reduce discharges associated with unsheltered homelessness, such as RV safe parking areas and pump out services, and social services that can help the unsheltered homeless transition to housing.

The DDCP shall prioritize providing housing and services to people experiencing unsheltered homelessness who are living near receiving waters.

The DDCP shall document the existing capacities for housing and services as of the time of the DDCP's submittal, and include projections of changes to those capacities for each subsequent year during the Permit term.

- (ii) For Permittees whose DDCPs address significant discharges from illegal dumping, systematic and comprehensive implementation of control actions shall include a commitment to, and a plan for, actions that will prevent direct discharges of trash to receiving waters from illegal dumping. Such actions include, but are not limited to, abating illegal dumping sites, providing dumping vouchers (particularly to socioeconomically disadvantaged communities), holding free waste drop-off events, and implementing onsite structural BMPs to prevent direct discharges from illegal dumping sites to receiving waters.

The DDCP shall prioritize addressing illegal dumping that occurs near receiving waters.

The DDCP shall document existing sites where illegal dumping occurs, controls at illegal dumping sites, voucher and free waste drop-off programs, and include projections for reductions in illegal dumping, increases of controls at illegal dumping sites, and expansions of (or the creation of) programs to control illegal dumping, such as dumping voucher programs and waste drop-off events, for each subsequent year during the Permit term.

- (iii) For Permittees whose DDCPs address significant discharges from both unsheltered homeless populations and illegal dumping sites, Permittees shall submit DDCPs in compliance with both Provisions C.10.f.ii.b.(i) and C.10.f.ii.b.(ii).

- (c) A map of the affected receiving water area and associated watershed;
and
- (d) A description of how effectiveness of controls will be assessed, including documentation of controls, quantification of trash volume controlled, and assessment of resulting improvements to receiving water conditions.

C.10.g. Reporting

Each Permittee shall provide the following in each Annual Report or otherwise by the date specified:

- i. With each Annual Report, a summary of trash control actions within each trash management area, including the types of actions, levels of implementation, areal extent of implementation, and whether the actions are ongoing or new, including initiation date.
- ii. With their 2024 Annual Report, Permittees shall submit a revised trash generation area map or maps, as described in Provision C.10.a.ii.
- iii. With each Annual Report, a summary of implementation actions and progress toward meeting the July 1, 2025, requirement for all private lands to implement full trash capture systems, or be managed with trash discharge control actions equivalent to or better than full trash capture systems, as required in Provision C.10.a.ii.(b).
- iv. With each Annual Report, certification that each of its full trash capture systems is operated and maintained to meet full trash capture system requirements; a description of any system(s) that did not meet full trash capture system requirements (e.g., due to plugging or overflowing); and any corrective actions taken.
- v. With each Annual Report, an accounting of its non-full trash capture system trash control actions assessments by providing a summary description of assessments in each of its trash management areas, including the number and dates of observations.
- vi. Permittees unable to attain the 90 percent mandatory trash reduction compliance benchmark by June 30, 2023, via full trash capture, or equivalent, shall, by June 30, 2023, submit a notice of noncompliance, pursuant to Provision C.22.c and an updated Trash Load Reduction Plan as described in Provision C.10.d.ii.
- vii. With their 2023 Annual Report, Permittees shall submit a report evaluating their trash reduction, relative to 2009 baseline conditions, as of June 30, 2023, without including offsets. Permittees unable to meet the 90 percent mandatory trash reduction compliance benchmark without the trash load reduction offsets

described in Provision C.10.f shall submit, with their 2023 Annual Report, an updated Trash Load Reduction Plan as described in Provision C.10.d.ii.

- viii.** Permittees unable to attain 100 percent trash load reduction, relative to 2009 baseline conditions, by June 30, 2025, while accounting for credits from new source control (as described in Provision C.10.b.v) shall, by June 30, 2025, submit a notice of noncompliance pursuant to Provision C.22.c, including a plan to come into compliance with the 100 percent trash load reduction requirement. Permittees may be granted additional time until December 31, 2025, and East Contra Costa County Permittees until June 30, 2026, to achieve 100 reduction via full trash capture, or equivalent, contingent on developing and implementing a direct discharge control plan (DDCP) as described in Provision C.10.f.ii.

Permittees, except East Contra Costa County Permittees, that are granted additional time until December 31, 2025, to attain 100 percent reduction via full trash capture, or equivalent, shall submit by December 31, 2025, either a report that confirms that they reached 100 percent trash load reduction by December 31, 2025, or a notice of noncompliance pursuant to Provision C.22.c.

- ix.** By March 31, 2023, Permittees may collectively submit a programmatic report for the approval of the Executive Officer, that describes typical conditions where it may be impracticable to control trash via full trash capture devices, as described in Provision C.10.e.
- x.** With the 2024 Annual Report, Permittees that offset part of their Provision C.10.a trash load percent reduction requirement through additional cleanup of creek and shoreline areas, as described in Provision C.10.f.i, shall submit a summary of the additional cleanup actions implemented, and the benefit to water quality achieved through those actions.
- xi.** Starting with the 2023 Annual Report, Permittees with approved DDCPs shall provide the following information in each Annual Report for which they use an offset from the implementation of Provision C.10.f.ii towards their trash load percent reduction:

- (1)** For Permittees whose DDCPs address significant discharges from unsheltered homeless populations, the following information for the current year, and for each prior year of the Permit term:

The estimated number of people experiencing unsheltered homelessness in their jurisdiction; the estimated number of people experiencing unsheltered homelessness living within approximately 500 feet of receiving waters; the estimated portion of those populations provided housing as described in Provision C.10.f.ii.b.(i); the estimated portion of

those populations served with the services described in Provision C.10.f.ii.b.(i); the number and scope of sanitation controls and services provided to homeless encampments; the number and scope of trash controls and services provided to homeless encampments; and the number and scope of sanitary cleanouts and other services provided to RVs. Each of these reporting elements shall be accompanied by a narrative description.

- (2) For Permittees whose DDCPs address significant discharges from illegal dumping sites, the following information for the current year, and for each prior year of the Permit term:

The total number of active illegal dumping sites; the number of active illegal dumping sites within approximately 500 feet of receiving waters; the number of illegal dumping sites where trash was collected and the amount of material collected; dumping vouchers provided (and who they are provided to); dumping vouchers used; and outreach and education provided to the public regarding illegal dumping and the availability of dumping vouchers. Each of these reporting elements shall be accompanied by a narrative description.

- (3) For Permittees whose DDCPs address significant discharges from both unsheltered homeless populations and illegal dumping sites, the Permittees shall report on both Provision C.10.g.xi.(1) and C.10.g.xi.(2) in each Annual Report.

C.11. Mercury Controls

The Permittees shall implement the following control program for mercury. This control program consists of load reduction assessment, source control measures, treatment control measures, measures to reduce risk to consumers of Bay fish, and reporting on all these measures according to the provisions below. The provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs for those waters identified therein and reduce mercury loads by approximately 10 kg/yr, making substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The San Francisco Bay mercury TMDL implementation plan calls for attainment of the regionwide, urban runoff wasteload allocation of 82 kg/yr by February 2028. This mercury wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 78 kg/yr compared to loads estimated using data collected prior to development of the TMDL. To measure progress, the TMDL implementation plan calls for attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation. This interim loading milestone has been achieved. The Permittees may comply with any requirement of this Provision through a collaborative effort and are encouraged to do so.

C.11.a. Assess Mercury Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall implement an assessment methodology and data collection program to quantify, in a technically sound manner, mercury loads reduced through implementation of pollution prevention, source control, and treatment control, green stormwater infrastructure and other measures taken as part of the mercury control program defined by this provision. A technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report and updated through reporting during the last Permit term as part of Reasonable Assurance Analysis reporting submitted by all Programs in September 2020. This accounting system describes calculation methodologies, data requirements, and model parameters used to quantify the load reduction for each type of control measure. The Permittees shall use the assessment methodology to demonstrate the load reductions achieved during this Permit term as well as progress toward achieving the MRP program area mercury TMDL wasteload allocations. The Permittees shall update this assessment methodology as necessary for use in the subsequent permit term.
- ii. **Implementation Level** – The Permittees shall quantify the mercury load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures implemented

during this Permit term as described in Provisions C.11.b through C.11.e. For this Permit term, the Permittees will achieve a regionwide total load reduction of approximately 10 kg mercury/yr if they implement effective mercury control measures consistent with all requirements of Provisions C.11.b through C.11.g. The Permittee-specific portion of the regionwide mercury load reduction estimate shall be based on the proportion of county population in each municipality.

iii. Reporting

- (1) In each Annual Report, Permittees shall submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.
- (2) In the 2026 Annual Report, Permittees shall report the total loads reduced using the assessment methodologies described and cited in the Fact Sheet to demonstrate cumulative mercury load reduced from each control measure implemented since the beginning of the Permit term. This report shall also include an estimate of load reductions from control measures taking place after the 2026 Annual Report submittal but before the end of the permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates.
- (3) In their 2026 Annual Report, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess mercury load reductions from control measures in the subsequent Permit. Any refinements to the methodologies shall be subject to public review.

C.11.b. Program for Source Property Identification and Abatement

- i. **Task Description** – Permittees shall investigate, using both conventional sampling and laboratory analysis techniques, land areas that likely contribute mercury to municipal separate storm sewer system (MS4s). These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). For those properties or land areas found to be contributing substantial amounts of mercury or where high mercury concentrations are found (generally areas with sediment concentrations greater than 0.5 mg Hg/kg), Permittees shall take action to abate the mercury sources into their MS4s or refer the properties to the Water Board for follow-up measures. Historical monitoring data suggest that mercury concentrations on or near source properties are similar to those found in urban areas in general so identification of source properties for referral may be based on presence of high PCBs concentrations (generally 0.5 mg PCBs/kg) alone. For each source property referred to the Water Board,

Permittees shall implement interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implement a stormwater treatment system downstream of the property. These enhanced O&M measures shall be sufficient to intercept historically deposited contaminated sediment in the vicinity of the source area and prevent further contaminated sediment from being discharged from the source area to the storm drain system.

ii. Implementation Level – Permittees shall investigate the following acreage of likely mercury source properties (accomplished through C.12.b investigations) during the permit term.

- Alameda County: 2,620 acres
- Contra Costa County: 1,700 acres
- San Mateo County: 1,411 acres
- Santa Clara County: 913 acres
- Solano County: 21 acres

If high mercury concentrations associated with a likely source property are detected, Permittees may submit monitoring information to support estimation of the aerial yield to receive mercury load reduction credit, contingent upon implementation of interim enhanced O&M measures in the street or storm drain infrastructure adjacent to the source property or implementation of a stormwater treatment system downstream of the property.

iii. Reporting

- (1) In each of the 2022 through 2026 Annual Reports, Permittees shall report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of the old industrial land use indicated above. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.
- (2) Permittees shall report annually on ongoing enhanced O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.11.a.iii(2) on total acreage of land area investigated, area and description of properties referred, description of enhanced O&M measures, and the estimated total mercury mass load reduced (consistent with the approved accounting procedures) resulting from implementing this control measure.

C.11.c. Program for Control Measure Implementation in Old Industrial Areas

i. **Task Description** – Permittees shall implement or cause to be implemented treatment control measures, stormwater diversion to wastewater treatment facilities, redevelopment (provided GSI is implemented in compliance with C.3.b), or other control measures to achieve mercury load reductions. Permittees have substantial (totaling over 33,100 acres) areas of old industrial land use draining to an MS4 that have not been redeveloped or treated with green stormwater infrastructure or other treatment controls.

- Alameda County: 9,374 acres
- Contra Costa County: 11,199 acres
- San Mateo County: 4,450 acres
- Santa Clara County: 6,647 acres
- Solano County: 1,426 acres

Implementation of treatment control measures on 2,580 acres (which is nearly 8 percent of the land area shown above) will result in a total estimated load reduction of about 108 g mercury/yr (2,580 acres x 70% efficiency x 60 mg mercury/acre/yr estimated yield from old industrial areas, see Fact Sheet) in the area covered by the Permit. Implementation of control measures with efficiency lower than 70% will result in reduced acreage credit (for those lower efficiency control measures) toward fulfillment of the total acreage requirement shown below. The acres credited will be proportional to the ratio of implemented control measure efficiency relative to the efficiency of treatment controls (see Fact Sheet for more explanation and examples). The old industrial land use acreages to be addressed by control measure implementation by the end of the permit term and the estimated mercury load reductions (for 70% control measure efficiency) are shown below. Permittees may comply with this provision element either through implementation of control measures on the following amounts of old industrial land use, based on implementation of 70% efficient control measures, or through accounting for the mass reduction of mercury shown in parentheses. If control measures are less than 70% efficient, the required acreage shall be calculated as set forth above.

- Alameda County: 664 acres (28 grams/yr)
- Contra Costa County: 664 acres (28 grams/yr)
- San Mateo County: 445 acres (19 grams/yr)
- Santa Clara County: 664 acres (28 grams/yr)
- Solano County: 142 acres (6 grams/yr)

ii. Implementation Level – Permittees shall, within the permit term, implement or cause to be implemented control measures (treatment controls, diversion to wastewater treatment plants, redevelopment (provided GSI implemented in compliance with Provision C.3.b), enhanced operation and maintenance controls, or other controls) to comply with the performance metrics in Provision C.11.c.i. Use of conditionally-approved sizing criteria cited in section C.3.j(3)(b) for treatment control systems will be considered provided an analysis is performed, acceptable to the Executive Officer, to determine the reduced effectiveness of the facility sized according to these alternative criteria. If a Permittee chooses to comply by demonstrating mercury load reductions, it shall use accounting methods consistent with Provision C.11.a. Implementation of treatment controls and stormwater diversion in mercury-contaminated catchments not designated as old industrial may count toward fulfillment of the required acreage. In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence of moderate to high mercury or PCBs soil concentrations (generally soil/sediment concentrations greater than 0.3 mg mercury/kg or 0.2 mg PCBs/kg). Treatment control systems must be designed and sized consistent with Provision C.3.d – (Numeric Sizing Criteria for Stormwater Treatment Systems). Permittees may choose to implement diversions to wastewater treatment systems to address this requirement. Because of the higher removal efficiency of wastewater treatment facilities, each acre addressed by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements provided that the diversion facilities are sized and operated consistent with the sizing requirements used for non-diversion treatment facilities.

iii. Reporting

- (1) By March 31, 2023, Permittees shall submit plans and schedules for implementing control measures and stormwater diversion to wastewater treatment facilities in old industrial areas to address mercury load reduction requirements included in this provision. This reporting shall include maps of the areas where control measures are to be implemented, the acreage of these catchments, and a description of design and sizing features all control measures, treatment devices and stormwater diversion facilities implemented for each treated catchment.
- (2) Beginning in 2023, in each Annual Report Permittees shall submit an account of control measure and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Reporting shall include maps of the areas treated, the acreage of

catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.

- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.11.a.iii(2) on all control measures and stormwater diversion measures implemented during the permit term and provide the total acreage treated and an estimate of the total mercury mass load reduced resulting from this implementation.

C.11.d. Mercury Collection and Recycling Implemented throughout the Region

- i. Task Description** – Permittees shall promote, facilitate, and/or participate in collection and recycling of mercury containing consumer products, devices, and equipment (e.g., thermometers, thermostats, switches, bulbs). Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs, thermostats, thermometers) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and Provision C.11.d requires promotion, facilitation and/or participation in these region-wide recycling efforts to increase effectiveness and public participation.
- ii. Implementation Level** – Permittees shall promote recycling of mercury-containing products and make efforts to increase effectiveness of these recycling efforts throughout the region. Recycling of mercury-containing bulbs and thermostats alone results in a regionwide load reduction of approximately 10 kg mercury per year.⁵⁷
- iii. Reporting**
 - (1) In each of the 2023 through 2026 Annual Reports, Permittees shall report on efforts to promote recycling of mercury-containing products and efforts to increase effectiveness of these recycling efforts. Permittees shall also report on the mass of mercury-containing material collected throughout the region along with an estimate of the mass of mercury contained in recycled material using the methodology contained in load reduction accounting system described and cited in the Fact Sheet.

C.11.e. Plan and Implement Green Stormwater Infrastructure to Reduce Mercury Loads

- i. Task Description** – Permittees shall implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j. Implementation of green

⁵⁷ Geosyntec Consultants and San Francisco Estuary Institute. 2010. "Desktop Evaluation of Controls for Polychlorinated Biphenyls and Mercury Load Reduction."

stormwater infrastructure will result in a total estimated load reductions of 108 g mercury/yr (see Fact Sheet for basis of estimate).

ii. Implementation Level – The level of implementation is determined by the requirements of Provision C.3.j.

iii. Reporting

(1) In their 2026 Annual Report, Permittees shall report as part of Provision C.11.a.iii(2)) on all green stormwater projects (e.g., parcel-based, street ROW, and regional projects) implemented during the permit term and provide the total acreage treated and an estimate of the total mercury mass load reduced resulting from this implementation. This reporting shall include summary descriptions of the implemented projects including GSI type, location, and area.

C.11.f. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

i. Task Description – In 2020, Permittees submitted a Reasonable Assurance Analysis and plan (RAA) demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028. Permittees shall evaluate the effectiveness of all mercury control measures and update the RAA as necessary. Updates can be focused on those control measures for which new information is available and for control measures not evaluated in previous efforts. Permittees shall also prepare detailed implementation plans for all control measures to be implemented in and inform permit requirements for the subsequent permit term.

ii. Implementation level – Permittees shall update, as necessary, their mercury control measures implementation plan and corresponding reasonable assurance analysis from the previous permit term (2015-2020, MRP 2). The update may be focused on control measures for which new information is available or for those control measures not previously evaluated. The long-term plan must:

- (1) Identify all technically and economically feasible mercury control measures to be implemented (including GSI projects); and
- (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
- (3) Provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

Additionally, Permittees shall identify all specific control measures to be implemented, the intensity of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term. This implementation plan must include:

- (4) Identification of all control measures implemented during the current permit term and any additional control measures to be implemented in the subsequent permit term;
- (5) A description of the intensity or extent of control measure implementation (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied, etc.);
- (6) Identification of accountability metrics to track during the subsequent permit corresponding to the proposed implementation intensity; and
- (7) Estimates for load reductions to be achieved through implementation of control measures during subsequent permit term at the proposed intensity.

iii. Reporting – Permittees shall submit the updated plan and schedule no later than March 31, 2026.

C.11.g. Fate and Transport Study of Mercury: Urban Runoff Impact on San Francisco Bay Margins

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of mercury discharged from urban runoff to San Francisco Bay margin areas. The studies should focus on near-shore areas contaminated with mercury from historical activity and the expected trajectory of recovery as sources from local watersheds are reduced.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of mercury discharged in urban runoff, the sediment and food web mercury concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web mercury accumulation, especially in Bay margins, and the identification of drainages where urban runoff mercury are particularly important in food web accumulation.
- iii. Reporting** – The Permittees shall submit in their 2023 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2023 Annual Report. The Permittees shall report in the March 15, 2026, Integrated Monitoring Report the findings and results of the studies completed, planned,

or in progress as well as implications of studies on potential control measures to be investigated, piloted, or implemented in future permit cycles.

C.11.h. Implement a Risk Reduction Program

- i. Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of mercury in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence anglers and their families. The risk reduction framework developed in the previous permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. Implementation Level** – At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement. In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2026 Annual Report.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. This control program consists of load reduction assessment, source control measures, treatment control measures, measures to reduce risk to consumers of Bay fish, and reporting on all these measures according to the provisions below. The provisions implement the urban runoff requirements of the PCBs TMDL for those waters identified therein. By implementing the PCBs control measure program requirements, Permittees will make substantial progress (an estimated 1.47 kg/yr of additional load reduction) toward achieving the urban runoff PCBs wasteload allocation from the TMDL. Of the 2 kg/yr overall load allocation for urban runoff sources for the entire region, 1.47 kg/yr has been allocated to Permittees, and loads must be reduced to this level by March 2030. This PCBs wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003. The Permittees may comply with any requirement of this Provision through a collaborative effort and are encouraged to do so.

C.12.a. Assess PCBs Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall implement an assessment methodology and data collection program to quantify, in a technically sound manner, PCBs loads reduced through implementation of pollution prevention, source control, and treatment control, green stormwater infrastructure and other measures taken as part of the PCBs control program defined by this provision. A technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report and updated through reporting during the last Permit term as part of Reasonable Assurance Analysis reporting submitted by all Programs in September 2020. This accounting system describes calculation methodologies, data requirements, and model parameters used to quantify the load reduction for each type of control measure. The Permittees shall use the assessment methodology to demonstrate the load reductions achieved during this Permit term as well as progress toward achieving the MRP program area PCBs TMDL wasteload allocations. The Permittees shall update this assessment methodology as necessary for use in the subsequent permit term.
- ii. **Implementation Level** – The Permittees shall quantify the PCBs load reductions achieved through all the pollution prevention, source control, green stormwater infrastructure, and other treatment control measures implemented during this Permit term as described in Provisions C.12.b through C.12.g. For this Permit term, the Permittees will achieve an estimated regionwide total load reduction of 1.47 kg/yr PCBs if they implement effective PCBs control measures consistent with all requirements of Provisions C.12.b through

C.12.g. The Permittee-specific portion of the regionwide PCBs load reduction estimate shall be based on the proportion of county population in each municipality.

iii. Reporting

- (1) In each Annual Report, Permittees shall submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.
- (2) In the 2026 Annual Report, Permittees shall report the total loads reduced using the assessment methodologies described and cited in the Fact Sheet to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the Permit term. This report shall also include an estimate of load reductions from control measures taking place after the 2026 Annual Report submittal but before the end of the permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates.
- (3) In their 2026 Annual Report, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions from control measures in the subsequent Permit. Any refinements to the methodologies shall be subject to public review.

C.12.b. Program for Source Property Identification and Abatement

- i. **Task Description** – Permittees shall investigate, using both conventional sampling and laboratory analysis techniques, land areas that likely contribute PCBs to MS4s. These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). For those properties or land areas found to be contributing substantial amounts of PCBs or where high PCBs concentrations are found (generally areas with sediment concentrations greater than 0.5 mg PCBs/kg), Permittees shall take actions to abate the PCB sources into their MS4s or refer the properties to the Water Board for follow-up measures. For each source property referred to the Water Board, Permittees should implement interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implement a stormwater treatment system downstream of the property. These enhanced O&M measures shall be sufficient to intercept historically deposited contaminated sediment in the vicinity of the source area and prevent further contaminated sediment from being discharged from the source area to the storm drain system.

ii. Implementation Level – Permittees shall investigate the following acreage of likely PCBs source properties during the permit term.

- Alameda County: 2,620 acres
- Contra Costa County: 1,700 acres
- San Mateo County: 1,411 acres
- Santa Clara County: 913 acres
- Solano County: 21 acres

Based on data collected through investigating land areas for the presence of source properties during the previous permit terms, this level of implementation will result in PCBs load reductions of approximately 740 g PCBs/yr, 50 percent of which would be credited during this permit term contingent upon implementation of interim enhanced operation and maintenance (enhanced O&M) measures in the street or storm drain infrastructure adjacent to the referred source property or implementation of a stormwater treatment system downstream of the property.

iii. Reporting

- (1) In each of the 2022 through 2026 Annual Reports, Permittees shall report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of the old industrial land use indicated above. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.
- (2) Permittees shall report annually on ongoing enhanced O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii(2) on total acreage of land area investigated, area and description of properties referred, description of enhanced O&M measures, and the estimated total PCBs mass load reduced (consistent with the approved accounting procedures) resulting from implementing this control measure.

C.12.c. Program for Control Measure Implementation in Old Industrial Areas

- i. Task Description** – Permittees shall implement or cause to be implemented treatment control measures, stormwater diversion to wastewater treatment facilities, redevelopment (provided GSI is implemented in compliance with

Provision C.3.b), or other control measures to achieve PCBs load reductions. Permittees have substantial (totaling over 33,100 acres) areas of old industrial land use draining to an MS4 that have not been redeveloped or treated with green stormwater infrastructure or other treatment controls.

- Alameda County: 9,374 acres
- Contra Costa County: 11,199 acres
- San Mateo County: 4,450 acres
- Santa Clara County: 6,647 acres
- Solano County: 1,426 acres

Implementation of treatment control measures on 2,580 acres (which is about 8 percent of the land area shown above) will result in a total estimated load reduction of about 467 g PCBs/yr (2,580 acres x 10% of area x 70% efficiency x 259 mg PCBs/acre/yr estimated yield from old industrial areas, see Fact Sheet) in the area covered by the Permit. Implementation of control measures with efficiency lower than 70 percent will result in reduced acreage credited (for those lower efficiency control measures) toward fulfillment of the total acreage requirement shown below. The acres credited will be proportional to the ratio of implemented control measure efficiency relative to the efficiency of treatment controls (see Fact Sheet for more explanation and examples). The old industrial land use acreages to be addressed by control measure implementation by the end of the permit term and the estimated PCBs load reductions (for 70 percent control measure efficiency) are shown below. Permittees may comply with this provision element either through implementation of control measures on the following amounts of old industrial land use, based on implementation of 70 percent efficient control measures, or through accounting for the mass reduction of PCBs shown in parentheses. If control measures are less than 70 percent efficient, the required acreage shall be calculated as set forth above.

- Alameda County: 664 acres (121 grams/yr)
- Contra Costa County: 664 acres (121 grams/yr)
- San Mateo County: 445 acres (81 grams/yr)
- Santa Clara County: 664 acres (121 grams/yr)
- Solano County: 142 acres (26 grams/yr)

- ii. **Implementation Level** – Permittees shall, within the permit term, implement or cause to be implemented control measures (treatment controls, diversion to wastewater treatment plants, redevelopment (provided GSI implemented in compliance with Provision C.3.b), enhanced operation and maintenance controls, or other controls) to comply with the performance metrics in Provision C.12.c.i. If a Permittee chooses to comply by demonstrating PCBs load

reductions, it shall use accounting methods consistent with Provision C.12.a. Implementation of treatment controls and stormwater diversion in PCBs-contaminated catchments not designated as old industrial may count toward fulfillment of the required acreage. In choosing locations for treatment controls and diversions, Permittees should focus on public rights-of-way and storm drain infrastructure in catchments containing known or suspected source areas or evidence of moderate to high PCBs soil concentrations (generally soil/sediment concentrations greater than 0.3 mg mercury/kg or 0.2 mg PCBs/kg). Treatment control systems must be designed and sized consistent with Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems). Use of conditionally-approved sizing criteria cited in section C.3.j(3)(b) for treatment control systems will be considered provided an analysis is performed, acceptable to the Executive Officer, to determine the reduced effectiveness of the facility sized according to these alternative criteria. Permittees may choose to implement diversions to wastewater treatment systems to address this requirement. Because of the higher removal efficiency of wastewater treatment facilities, each acre addressed by routing stormwater to wastewater treatment facilities will be credited as 1.3 acres toward satisfying the treatment requirements provided that the diversion facilities are sized and operated consistent with the sizing requirements used for non-diversion treatment facilities.

iii. Reporting

- (1) By March 31, 2023, Permittees shall submit plans and schedules for implementing control measures and stormwater diversion to wastewater treatment facilities in old industrial areas to address PCBs load reduction requirements included in this provision. This reporting shall include maps of the areas where control measures are to be implemented, the acreage of these catchments, and a description of design and sizing features all control measures, treatment devices and stormwater diversion facilities implemented for each treated catchment.
- (2) Beginning in 2023, in each Annual Report Permittees shall submit an account of control measure and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Reporting shall include maps of the areas treated, the acreage of catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.
- (3) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii(2) on all control measures and stormwater diversion measures implemented during the permit term and provide the total acreage treated and an estimate of the total PCBs mass load reduced resulting from this implementation.

C.12.d. Program for Controlling PCBs from Bridges and Overpasses

- i. Task Description** – Permittees shall implement a Caltrans specification (to be developed through proposed requirement in Caltrans stormwater permit, see Fact Sheet for details) to manage, as part of bridge and overpass roadway replacement or major repair, potential PCBs-containing material in bridge roadway expansion joints. Implementation of this specification will result in a total estimated load reductions of 300 g PCBs/yr (see Fact Sheet for calculation details in the program area). Countywide programs and their member municipalities will be credited with a portion of this total load reduction in proportion to their share of population. Load reduction credit for this program will begin upon submittal of documentation demonstrating full implementation of the Caltrans specification for applicable roadway structures.
- ii. Implementation Level** – Permittees shall track the development of the Caltrans specification and develop an inventory of bridges in their jurisdictions that includes bridge ownership and a replacement/repair schedule. Finally, Permittees shall, by December 31, 2022, or six months after availability of the specification, implement or cause to be implemented the Caltrans specification during applicable replacement activities that are under the direction of the Permittee.
- iii. Reporting**
 - (1) In their 2022 Annual Report or the Annual Report immediately following availability of the specification, Permittees shall include a description of the Caltrans specification for managing PCBs-containing materials in bridge or roadway expansion joints during roadway replacement or repair.
 - (2) In their 2023 Annual Report, Permittees shall submit an inventory of bridges in the program area that includes bridge ownership and the bridge roadway replacement schedule.
 - (3) In their 2022 through 2026 Annual Reports, Permittees shall submit documentation confirming the use of the Caltrans specification (once it is available) during all instances of bridge roadway replacement or repair in their jurisdiction during that reporting year and provide an estimate of the volume of material managed and total PCBs mass load reduced resulting from implementation of the specification.
 - (4) In their 2026 Annual Report, Permittees shall report as part of reporting under Provision C.12.a.iii.(2) an estimate of the total PCBs mass load reduced, consistent with approved accounting procedures, resulting from implementing this control measure.

C.12.e. Program for Controlling PCBs from Electrical Utilities

- i. Task Description** – Permittees shall (1) develop and implement a program to manage PCBs in oil-filled electrical equipment (OFEE) for municipally-owned electrical utilities in the MRP program area and (2) collaborate with the Water Board to determine PCBs loadings in OFEE from non-municipally owned electrical utilities.
- ii. Implementation Level** – Permittees shall do the following:
 - (1) Develop or improve standard operating procedures to respond to, clean up, and report spills and releases from municipally owned OFEE and fully implement these procedures.
 - (2) Develop and implement a plan to maintain and upgrade municipally owned OFEE.
 - (3) Document the PCBs loads avoided through existing and ongoing OFEE removal and replacement programs.
 - (4) Collaborate with the Water Board to request information from non-municipally owned electrical utilities. Permittees shall utilize the information to (a) determine the locations of PCBs-containing OFEE, (b) improve estimates of the total baseline mass of PCBs in OFEE in the MRP permit area, (c) evaluate the actions the non-municipally owned electrical utilities are taking to reduce or prevent the release of PCBs from their equipment and to respond to potential releases of PCBs from their equipment; and (d) identify opportunities to improve the response and cleanup protocols.
- iii. Reporting**
 - (1) Permittees shall submit in their 2023 Annual Report the estimated PCBs loads avoided (along with supporting documentation) resulting from the removal of municipally-owned PCBs-containing OFEE through maintenance programs and system upgrades for the period 2002 to the beginning of this permit term (2023).
 - (2) Permittees shall submit in their 2023 Annual Report a description of the improved spill response and reporting practices implemented by municipally owned electrical utilities.
 - (3) Permittees shall submit in their 2024 Annual Report a summary of their plans to maintain and upgrade OFEE for municipally owned electrical utilities.
 - (4) Permittees shall submit in every Annual Report, beginning with the 2023 report, a summary of the actions undertaken during that reporting year

that remove municipally owned PCBs-containing OFEE along with the loads avoided and the details of the calculations and assumptions used to estimate the load reduced.

- (5) Permittees shall submit in their 2026 Annual Report, as part of reporting under Provision C.12.a.iii(2), the estimated PCBs loads reduced during the permit term associated with municipally owned OFEE removal resulting from maintenance programs and system upgrades.
- (6) Within 12-months of the Water Board transmitting to the Permittees information from the non-municipally owned electrical utilities, Permittees shall submit a report discussing the following, to the extent possible given any data limitations: (a) locations of the PCBs-containing OFEE still in service, (b) previous locations of PCBs-containing OFEE, and (c) opportunities to improve non-municipally owned electrical utilities' standard operating procedures for spill response, reporting, cleanup, and sampling and analysis.

C.12.f. Plan and Implement Green Stormwater Infrastructure to reduce PCBs loads

- i. **Task Description** – Permittees shall implement green stormwater infrastructure (GSI) projects during the term of the Permit consistent with implementing requirements in Provision C.3.j. Implementation of green stormwater infrastructure will result in a total estimated load reductions of 200 g PCBs/yr (see Fact Sheet for basis of estimate).
- ii. **Implementation Level** – The level of implementation is determined by the requirements of Provision C.3.j.
- iii. **Reporting**
 - (1) In their 2026 Annual Report, Permittees shall report as part of Provision C.12.a.iii(2)) on all green stormwater projects (e.g., parcel-based, street right-of-way, and regional projects) implemented during the permit term and provide the total acreage treated and an estimate of the total PCBs mass load reduced resulting from this implementation. This reporting shall include summary descriptions of the implemented projects including GSI type, location, and area.

C.12.g. Manage PCB-Containing Materials and Wastes During Building Demolition Activities

- i. **Task Description** – Prior to issuing a demolition permit, Permittees shall implement the protocol developed during the previous permit term (see Fact Sheet for protocol description) for managing PCB-containing materials and wastes during building demolition so that PCBs do not enter MS4s. Permittees

shall also ensure construction sites are inspected during demolition and obtain verification that materials from demolished buildings are appropriately disposed.

Provision C.12.g. applies to applicable structures containing building materials with PCBs concentrations of 50 ppm or greater at the time such structures undergo demolition. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff. Applicable structures include, at a minimum, commercial, public, institutional, and industrial structures constructed or remodeled between the years 1950 and 1980. Single-family residential and wood frame structures are exempt.

Structures that are constructed or remodeled between the years 1950 and 1980 and require emergency demolition to protect public health and/or safety are exempt from implementing the protocol, but they must be reported in accordance to Provision C.12.g.iii.(3)(d)

The Town of Clayton is exempt from the requirements of Provision C.12.g. because it has demonstrated it has no applicable structures. Other Permittees may be exempted from the requirements in Provision C.12.g. if they provide evidence acceptable to the Executive Officer in their 2023 Annual Report that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

Implementation of this protocol will result in a total estimated load reduction of 2 kg PCBs/yr (see Fact Sheet for calculation details) in the program area. This constitutes an ongoing rather than a new load reduction.

ii. Implementation Level

- (1) Permittees shall implement their established protocol prior to issuing a demolition permit.
- (2) For demolition of applicable structures containing building materials with PCBs concentrations of 50 ppm or greater approved beginning July 1, 2023, Permittees shall require demolition contractors to provide notification to the Permittees, the Water Board, and U.S. EPA at least one week before any demolition is to occur.
- (3) Beginning the 2023 rainy season, Permittees shall inspect demolition sites with applicable structures containing building materials with PCBs concentrations of 50 ppm or greater pursuant to Provision C.6 to ensure that effective construction pollutant controls are used to prevent discharge into the MS4.

- (4) Permittees shall enhance their construction site control program to minimize migration of PCBs into the MS4 from applicable structures containing building materials with PCBs concentrations of 50 ppm or greater during demolition activities. Enhancements may include inspecting demolition sites monthly during demolition activities in the dry season (May – September) and requiring the demolition contractors to sweep the project sites and the streets around the property with street sweepers that will effectively remove sediment and dust. Implementation of enhancements shall begin no later than July 1, 2023.
- (5) For demolition of applicable structures containing building materials with PCBs concentrations of 50 ppm or greater approved after July 1, 2023, Permittees shall verify that PCBs in demolished buildings are properly managed to minimize transport to the MS4 by obtaining official documentation that the building materials with PCBs concentrations of 50 ppm or greater in these demolished applicable structures were disposed appropriately according to state and federal regulations.
- (6) Permittees may elect to update for use in the subsequent permit term the assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

iii. Reporting

- (1) Each Permittee seeking exemption from Provision C.12.g requirements based on lack of applicable structures must submit in its 2023 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 were single-family residential and/or wood-frame structures.
- (2) In their 2023 Annual Report, Permittees shall discuss enhancements to their construction site control program to minimize migration of PCBs from demolition activities into the MS4.
- (3) Beginning with their 2023 Annual Report, the Permittees shall provide each of the following items:
 - (a) The number of applicable structures that applied for a demolition permit during the reporting year;
 - (b) A running list of the applicable structures that applied for a demolition permit since July 1, 2019, the number of samples each structure collected, and the concentration of PCBs in each sample.

- (c) For each applicable structure, with PCBs concentrations of 50 mg/kg or greater, include the following: the project address, the demolition date, and a brief description of the PCBs-containing materials.
 - (d) For each structure that was constructed or remodeled between the years 1950 and 1980 and requires emergency demolition to protect public health and/or safety, provide the following: address, date building was constructed, and date of demolition.
- (4) Beginning with their 2024 Annual Report, Permittees shall provide the following: whether the site was inspected during demolition, and for those cases where notification and advance approval from the U.S. EPA is not required and were approved for demolition after June 30, 2023, the hazardous waste manifest prepared for transportation of the material to a disposal facility.
- (5) In their 2026 Annual Report, Permittees shall submit an evaluation of the effectiveness of the protocol for controlling PCBs during building demolition as well as supporting data. This should be conducted and reported at the regional level on behalf of all Permittees and shall be considered the Report of Waste Discharge for Provision C.12.g for the next permit reissuance.
- (6) In their 2026 Annual Report, Permittees may submit for use in the subsequent permit term an updated assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs-containing materials and wastes during demolition of applicable structures.

C.12.h. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

- i. **Task Description** – In 2020, Permittees submitted a Reasonable Assurance Analysis and plan (RAA) demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030. Permittees shall evaluate the effectiveness of all PCBs control measures and update the RAA as necessary. Updates can be focused on those control measures for which new information is available and for control measures not evaluated in previous efforts. Permittees shall also prepare detailed implementation plans for all control measures to be implemented in and inform permit requirements for the subsequent permit term.
- ii. **Implementation level** – Permittees shall update, as necessary, their PCBs control measures implementation plan and RAA. The update may be focused on control measures for which new information is available or for those control measures not previously evaluated. The long-term plan must:

- (1) Identify all technically and economically feasible PCBs control measures to be implemented (including GSI projects); and
- (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
- (3) Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

Additionally, Permittees shall identify all specific control measures to be implemented, the intensity of control measure implementation, and the estimated load reduction benefit from control measures implemented during the subsequent permit term. This implementation plan must include:

- (a) Identification of all control measures implemented during the current permit term and any additional control measures to be implemented in the subsequent permit term;
- (b) A description of the intensity or extent of control measure implementation (e.g., acres treated, acres investigated for source areas, types of roadway projects for which protocols applied);
- (c) Identification of accountability metrics to track during the subsequent permit corresponding to the proposed implementation intensity; and
- (d) Estimates for load reductions to be achieved through implementation of control measures during subsequent permit term at the proposed intensity.

iii. Reporting – Permittees shall submit the updated plan and schedule no later than March 31, 2026.

C.12.i. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. The studies should focus on near-shore areas contaminated with PCBs from historical activity and the expected trajectory of recovery as sources from local watersheds are reduced.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban

runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

- iii. **Reporting** – The Permittees shall submit in their 2023 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2023 Annual Report. The Permittees shall report in the March 15, 2026, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted, or implemented in future permit cycles.

C.12.j. Implement a Risk Reduction Program

- i. **Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence anglers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. **Implementation Level** – At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement. In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. **Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2026 Annual Report.

C.13. Copper Controls

The Permittees shall implement the following control program for copper. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of Provision C.13 through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

i. **Task Description** – The Permittees shall prohibit the discharge of wastewater to storm drains generated from installing, cleaning, treating, or washing copper architectural features, including copper roofs.

ii. Implementation Level

- (1) The Permittees shall require, when issuing building permits, use of appropriate BMPs for managing copper-containing waste during and post-construction.
- (2) The Permittees shall educate installers and operators on appropriate BMPs for managing copper-containing wastes.
- (3) The Permittees shall enforce against noncompliance.

iii. Reporting

- (1) In the 2022 Annual Report, those Permittees that have not previously done so shall certify that legal authority currently exists to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs.
- (2) In the 2022 Annual Report, the Permittees shall report how copper architectural features are addressed through the issuance of building permits.
- (3) The Permittees shall report annually permitting and enforcement activities.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

i. **Task Description** – Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.

ii. Implementation Level – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

iii. Reporting

(1) In the 2022 Annual Report, the Permittees that have not previously done so shall certify that legal authority currently exists to prohibit the discharges to storm drains of water containing copper-based chemicals from pools, spas, and fountains.

(2) In the 2022 Annual Report, the Permittees shall report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.

(3) The Permittees shall report annually on any enforcement activities.

C.13.c. Industrial Sources

i. Task Description – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

ii. Implementation Level

(1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.

(2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.

(3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on site.

iii. Reporting

The Permittees shall highlight copper reduction results in the industrial inspection component in the Provision C.13 portion of each Annual Report.

C.14. Bacteria Control for Impaired Water Bodies

Provisions C.2 through C.7 contain requirements to control sources of pollutants to the Permittees' MS4s. Implementation of these requirements should control sources of bacteria⁵⁸; still, exceedances of bacteria water quality objectives occur in some water bodies that receive urban runoff. Permittees identified in this Provision shall demonstrate compliance with bacteria related Receiving Water Limitations during this Permit term through the timely implementation of control measures and other actions to reduce bacteria discharges from their municipal separate storm sewer systems in accordance with the requirements of this Provision. Provision C.14.a applies to the cities of Mountain View and Sunnyvale for their discharges that are causing or contributing to exceedances of bacteria water quality objectives in Stevens Creek, Calabazas Creek, and Sunnyvale East Channel/Guadalupe Slough, water bodies without bacteria TMDLs. Provision C.14.b applies to Permittees with San Pedro Creek and Pacifica State Beach Indicator Bacteria TMDL wasteload allocations, Provision C.14.c applies to Permittees with San Francisco Bay Beaches Bacteria TMDL wasteload allocations, and Provision C.14.d applies to Permittees with Pillar Point Harbor Beaches and Venice Beach Bacteria TMDL wasteload allocations.

C.14.a. Enhanced Bacteria Control

Enhanced bacteria control requirements are applicable to the cities of Mountain View and Sunnyvale for discharges that are causing or contributing to exceedances of applicable bacteria water quality objectives in Stevens Creek (both cities), Calabazas Creek (Sunnyvale), and Sunnyvale East Channel/Guadalupe Slough (Sunnyvale).⁵⁹ "Cities" as used in this Provision C.14.a refers to these cities.

The actions described in this Provision shall be implemented where controllable bacteria sources are located within the Cities' jurisdiction, in order to reduce bacteria inputs to the water body with bacteria exceedances.

i. Municipal Operations Bacteria Control

- (1) **Task Description** – Evaluate the potential for municipal operations to generate and cause bacteria to be transported to surface waters. Where such potential is determined to exist, develop and implement BMPs to minimize the transport of bacteria.

⁵⁸ Bacteria as used herein refers to fecal indicator bacteria.

⁵⁹ The geometric mean of indicator bacteria levels in a waterbody shall not be greater than the applicable geometric mean water quality objective in any six-week interval, calculated weekly. The indicator bacteria levels shall not be greater than the applicable statistical threshold value water quality objective in more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

- (2) **Implementation Level** – The Cities shall develop and implement BMPs to minimize potential bacteria sources, including, but not limited to, trash, human and animal fecal sources, and excessive biofilm, for the following municipal operations:
 - (a) Street and road cleaning
 - (b) Parks and municipal open space maintenance
 - (c) Sidewalk, plaza, and pavement cleaning
 - (d) MS4 component maintenance, such as cleaning biofilm from catch basins, piping, and pump stations.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, frequency and location for actions taken to reduce bacteria sources related to municipal operations.

ii. Industrial/Commercial Site Bacteria Control and Illicit Discharge Detection and Elimination

- (1) **Task Description** – Train municipal staff responsible for inspecting and enforcing industrial and commercial site controls and for detecting and eliminating illicit discharges to enhance their focus on potential bacteria sources. The Cities shall use enforcement authorities to ensure bacteria sources are controlled.
- (2) **Implementation Level** – The Cities shall enhance their efforts to ensure transport to surface waters from the following potential bacteria sources is minimized:
 - (a) Roof and exterior washoff of commercial and industrial structures and surfaces, where these sources are likely to contain bacteria, such as from rodent and bird wastes, and are likely to be discharged to receiving water
 - (b) Outdoor garbage and recycle bins
 - (c) Outdoor floor-mat washoff
 - (d) Portable toilets
 - (e) Illicit discharges to the MS4
- (3) **Reporting** – In each Annual Report, the Cities shall describe BMP, frequency, and location for actions taken to reduce bacteria sources related to Industrial and Commercial Site Bacteria Control and Illicit Discharge Detection and Elimination.

iii. Control of Bacteria Sources Related to Unsheltered Homeless Populations

- (1) **Task Description** – Evaluate the potential for bacteria transport to surface waters from areas inhabited by unsheltered homeless persons. Where such potential is determined to exist develop and implement BMPs to minimize such bacteria sources and transport.
- (2) **Implementation Level** – The Cities shall minimize the transport of bacteria from areas inhabited by unsheltered homeless persons by taking actions that may include, but are not limited to, the following:
 - (a) Provide pump-out stations, mobile pumping services, or voucher programs for proper disposal of sanitary sewage where unsheltered homeless persons reside in recreational vehicles
 - (b) Provide sanitation services, including access to running water, where feasible, at locations where homeless people live or congregate
 - (c) Establish and update sidewalk, street, and/or plaza cleaning standards for the cleanup and appropriate disposal of human waste
- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, numbers or frequency (as applicable), and locations of actions taken to reduce bacteria discharges from areas inhabited by unsheltered persons.

iv. Pet and Livestock Bacteria Source Control

- (1) **Task Description** – Evaluate the potential for domestic animal sources, such as pet waste, kennels, horse boarding facilities and trails, to generate and cause to be transported to surface waters. Where such potential is determined to exist, develop and implement BMPs to minimize such bacteria sources and prevent transport.
- (2) **Implementation Level** – The Cities shall ensure transport of bacteria from domestic animal sources to surface waters is minimized by taking the following actions:
 - (a) Enhance numbers of, and maintenance of, pet waste stations
 - (b) Inspect pet boarding facilities to ensure pet waste is managed to prevent offsite discharges
 - (c) Inspect horse boarding facilities, if any, to ensure manure is managed to prevent offsite discharges. Notify Water Board staff of facilities that should enroll in the Confined Animal Facility program.

- (3) **Reporting** – In each Annual Report, the Cities shall describe the BMPs, numbers or frequency (as applicable), and locations of actions taken to reduce bacteria from domestic animal sources.

v. Public Outreach on Bacteria Source Control

- (1) **Task Description** – Evaluate public outreach currently conducted to encourage bacteria pollution prevention and determine how to improve such outreach, such as, for example, by focusing outreach on certain populations or at certain locations.
- (2) **Implementation Level** – The Cities shall enhance public outreach where it is likely to improve human behavior regarding bacteria pollution prevention practices, such as, but not limited to, the following:
 - (a) Cleaning up pet waste
 - (b) Eliminating litter
 - (c) Eliminating outdoor restaurant floor mat washdown
 - (d) Using proper BMPs for sidewalk cleaning
 - (e) Covering trash storage areas
 - (f) Maintaining porta-potties properly.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the outreach messages, methods of delivery, audiences, and number of repetitions.

vi. Coordination with Sanitary Sewerage System Entities

- (1) **Task Description** – Overflows and leaks from sanitary sewage conveyance systems can cause bacteria to be transported to MS4s, and commonly the Cities are not responsible for maintenance and repair of the sanitary sewerage system. This task encourages the Cities to collaborate with the entities responsible for the sanitary sewerage system to minimize overflows and leaks.
- (2) **Implementation Level** – The Cities shall, to the extent necessary and within the limits of their authorities, collaborate with their counterparts who are responsible for maintenance of the sanitary sewerage system to assist with the following:
 - (a) Prioritize maintenance and repair in areas contributing to bacteria loads to surface waters with elevated bacteria
 - (b) Ensure rapid and thorough response to cleanup sanitary sewer system overflows

- (c) Develop lateral maintenance and replacement programs for consideration by the appropriate legal authority.
- (3) **Reporting** – In each Annual Report, the Cities shall describe the status of any actions taken to coordinate with sanitary sewer entities.

vii. Prioritize Trash Removal to Control Bacteria Sources

- (1) **Task Description** – Evaluate the potential bacteria-reduction benefit of prioritizing trash control efforts required in Provision C.10 in areas where trash generation may be contributing to bacteria exceedances in local surface waters. Where such benefit appears significant, reprioritize trash control actions accordingly.
- (2) **Implementation Level** – The Cities shall focus some of their trash reduction efforts to areas where trash generation likely contributes to bacteria exceedances in local surface waters.
- (3) **Reporting** – In each Annual Report, the Cities shall describe how the bacteria-reduction benefit of focused trash-control efforts was evaluated, the conclusions reached, and any actions taken during the reporting period to reprioritize trash control areas.

viii. Water Quality Monitoring

- (1) **Task Description** – The Cities shall develop and implement a monitoring program to identify and characterize potential bacteria sources to receiving waters that have been found to exceed bacteria water quality objective(s), to help focus source control efforts and evaluate effectiveness of controls, and to ultimately demonstrate attainment of bacteria receiving water limitations. The monitoring program shall be designed and adapted to answer the following questions:
 - (a) What is the spatial and temporal extent of dry weather flows in the MS4?
 - (b) Are indicators of human fecal material present in both dry and wet weather flows observed in the MS4?
 - (i) If so, in which stormwater catchments are sources most prominent?
 - (ii) Where are the likely locations of these sources in the catchments?
 - (iii) What measures can be implemented to control these sources?
 - (c) Are water quality objectives being achieved during dry weather?
 - (d) Are water quality objectives being achieved during wet weather?

- (2) **Implementation Level** – At a minimum, the monitoring program shall include the following:
- (a) Sampling of all MS4 outfalls with flow during three dry weather creek walks. One to be scheduled during July / August 2022, one to be scheduled January / February 2023, and one in April / May 2023;
 - (b) Desktop and field methods based on elements described in the California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (Griffith et al. 2013);
 - (c) Geographic information system analysis of potential sources and existing bacteria control action locations to evaluate existing and identify and optimize additional bacteria controls;
 - (d) MS4 bacteria characterization monitoring at least monthly through September 2023, including two events that coincide with wet weather discharges, at a minimum of 14 sites each year to identify sources of bacteria discharges to and from the MS4 using microbial source tracking techniques to detect human genetic markers (i.e., HF183) and to evaluate effectiveness of bacteria controls, including the following:
 - (i) Identification of stormwater catchments where monitoring will be conducted;
 - (ii) Characterization of indicator bacteria, i.e., E coli, densities in subwatersheds, storm drains, outfalls, and pump stations that drain to receiving waters with excessive levels of indicator bacteria; and
 - (iii) Determination of baseline (or current) conditions against which future monitoring results can be compared following new, enhanced, or ongoing control measure implementation.
 - (e) Receiving water monitoring at least monthly, from October 2023 through September 2024, including two events that coincide with, or within 48 hours, of a storm event forecasted to be at least 0.5 inch in 24 hours, to determine E. coli densities, where salinity is less than 1 ppt, and Enterococci densities, where salinity is greater than 1 ppt, at a minimum total of 5 sites in Stevens Creek, 3 sites in Calabazas Creek, and 1 site in Sunnyvale East Channel, including the following:
 - (i) Stevens Creek immediately downstream of Homestead;
 - (ii) Stevens Creek La Avenida;

- (iii) Sunnyvale East Channel upstream of Tasman (above tidal influence);
 - (iv) Calabazas Creek downstream of Homestead; and
 - (v) Calabazas Creek upstream of Tasman.
- (3) **Reporting** – In each Annual Report, the Cities submit the results of all monitoring conducted the previous year, including parameters analyzed, frequencies, and locations, and planned monitoring for the current year, including parameters, frequencies, and locations.

ix. Compliance with Receiving Water Limitations

- (1) **Task Description** – The Cities shall determine whether discharges from their MS4s are causing or contributing to exceedances of bacteria water quality objectives in receiving waters after implementation of control measures required by C.14.a.i-vii. The Cities are expected to meet Receiving Water Limitations B.2 for applicable bacteria water quality objectives by June 30, 2027. If receiving water limitations are not met, despite a diligent effort to quantify levels and the sources of bacteria in MS4 discharges and documentation of completion of controls required by C.14.a.i-vii, then the Cities shall submit a plan for additional actions to attain the receiving water limitations.
- (2) **Implementation Level** – The Cities shall provide a comprehensive assessment of bacteria sources and bacteria controls to demonstrate compliance with receiving water limitations for applicable bacteria water quality objectives. If compliance cannot be achieved by June 30, 2027, the assessment shall describe additional control measures or increased levels of implementation for existing control measures, with an implementation schedule, and proposed milestones, that will be implemented to attain bacteria receiving water limitations as soon as possible.
- (3) **Reporting** – The Cities shall submit a Mid-Permit Interpretive Report and a Final Interpretive Report.
- (a) The Mid-Permit Interpretive Report shall be submitted by March 31, 2025, which includes the following:
- (i) All data collected through September 2024 and description of data validation and quality;
 - (ii) Description of progress towards answering questions in C.14.a.viii.(1);
 - (iii) Description of specific bacteria sources and/or specific geographic areas that receive implementation of existing control

measures, as well as recommended new, modified, or enhanced control that will be evaluated or implemented;

- (iv) Description of monitoring, subject to approval by the Water Board through a Permit amendment, to be conducted through the remainder of the Permit term to answer the questions in C.14.a.viii.(1). The monitoring shall be as comprehensive, systematic, and robust as what is required in Provision C.14.a.viii while being commensurate with the need to address and resolve bacteria exceedances in the receiving waters.
- (b) The Final Interpretive Report shall be submitted by December 31, 2026, which includes the following:
- (i) All data collected through September 2026 and description of data validation and quality;
 - (ii) Description of progress towards answering questions in C.14.a.viii.(1);
 - (iii) Description of specific bacteria sources and/or specific geographic areas that received implementation of existing control measures, as well as new, modified, or enhanced control that were evaluated or implemented;
 - (iv) Determination if bacteria receiving water limitations have or will be met, by June 30, 2027; and
 - (v) If bacteria receiving water limitations will not be met by June 30, 2027, description of additional control measures or increased levels of implementation for existing control measures, with an implementation schedule, and proposed milestones, that will be implemented to attain bacteria receiving water limitations as soon as possible, and a proposed monitoring program designed to answer the questions in C.14.a.viii.(1) that will be implemented in the next permit term.

C.14.b. City of Pacifica and San Mateo County Bacteria Controls

The City of Pacifica (City) and San Mateo County (County) Permittees shall implement the actions in this subprovision to control fecal indicator bacteria. The City and County shall focus implementation of bacteria control measures in areas where benefits are most likely to accrue. The goal of this subprovision is to implement the urban runoff (stormwater runoff and dry weather flows) requirements of the San Pedro Creek and Pacifica State Beach Indicator Bacteria TMDL. In accordance with the TMDL, the City and County are required to meet the wasteload allocations for Pacifica State Beach by August

1, 2021, and for San Pedro Creek by August 1, 2028. The City and County may comply with any requirement of this provision through a collaborative effort.

i. Control Measures to Achieve Indicator Bacteria Wasteload Allocations

- (1) **Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to meet the stormwater TMDL wasteload allocations in the San Pedro Creek (Creek) watershed and Pacifica State Beach (Beach) Indicator Bacteria TMDL (TMDL Project Area).
- (2) **Implementation Level** – To comply with this element:
 - (a) The City and County, as appropriate, shall prohibit potential illicit discharges into their storm sewer system from sanitary sewer overflows or the sanitary sewer lines within their jurisdictions as follows:
 - (i) Ensure all sanitary sewer lines within a 2,000-foot radius of the Creek and Beach are inspected, assessed, and repaired, as needed, within 60 months of the Permit effective date;
 - (ii) Ensure at least 20 percent of the storm sewer system discharging to San Pedro Creek or Pacifica State Beach is evaluated and addressed for illicit sanitary sewer connections each year to prevent discharges from the sanitary sewer lines; and
 - (iii) Coordinate with the responsible sanitary sewer collection agency to identify and implement BMPs to prevent sanitary sewer overflows, such as developing or enhancing a spill response plan for significant sanitary sewer overflow incident areas to decrease potential sewage discharges into the storm sewer system.
 - (b) The County shall continue to address bacteria discharges from commercial horse and dog kennel facilities (facilities) into its storm sewer system as follows:
 - (i) Inspect each facility annually for code compliance by June 30 of each year.
 - (ii) Review each facility's current manure, stormwater, and drainage management plans for code compliance by June 30 of each year.
 - (iii) Provide a copy of the facilities inspection and review reports to the Water Board in each annual report.

- (iv) Take progressive enforcement, as needed, for facilities found to be noncompliant with the County's Confined Animal Ordinance.
- (c) The City shall continue to address bacteria discharges from commercial horse facilities (facilities) into its storm sewer system as follows:
 - (i) Review each facility's compliance with the City's Administrative Policy on "Standards for Keeping Animals."
 - (ii) Review each facility's compliance with the City's Municipal Code on "Animal Excreta."
 - (iii) Conduct annual compliance review and inspection of each facility by June 30 of each year.
 - (iv) Provide a copy of the facilities inspection and review reports to the Water Board in each annual report.
 - (v) Take progressive enforcement action(s), as needed, to bring noncompliant facilities into compliance with the City's Administrative Policy on "Standards for Keeping Animals" and Municipal Code on "Animal Excreta."
- (d) The City shall continue to maintain existing and any new dog waste clean-up signs, waste bag dispensers, and trash cans within the TMDL Project Area.
- (e) The City shall continue to implement a visual inspection and cleanup plan for high dog waste accumulation areas along the Creek and its tributaries. From April 1 through October 31, inspections and cleanups shall, at a minimum, be conducted on a quarterly basis (e.g., once each in April, July, and October). From November 1 through March 31, inspections and cleanups shall be conducted prior to forecast rain events with a forecast rainfall depth of 0.2 inches or more (as measured at Half Moon Bay Airport (KHAF) Meteorological Station, or comparable site), and at a frequency of no less than once a month.
- (f) The City shall continue to implement a pet waste public outreach and education campaign that, at a minimum, includes all the following:
 - (i) Establish a public pet waste management stakeholder group (e.g., formal or informal dog owners club).
 - (ii) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Creek and Beach to play on the local television station and to include in print ads in the Pacifica Tribune.

- (iii) Distribute a mailer with an informational brochure to residents and businesses describing proper pet waste management, the linkage of the watershed to the Creek and Beach, and the adverse impact on those water bodies and those recreating in them from improper pet waste management.
 - (iv) Maintain a web page to the City website with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Creek and Beach and public health.
 - (v) Create and implement a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Creek and Beach.
 - (vi) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
 - (g) The City and County, based on the results of the source characterization and BMP effectiveness, and wasteload allocation attainment analyses described in Provision C.14.b-iii, shall modify or refocus control measure implementation efforts as appropriate, at a frequency of no less than every two years.
- (3) Reporting** – No later than March 15 of each year, the City and County shall submit a comprehensive TMDL Status and Monitoring Report, reporting on the specific control measures (as listed in Provision C.14.b.1.ii) that have been implemented in the TMDL Project Area during the foregoing October 1 through September 30 period. This report shall include:
- (a) The number, type, and locations and/or frequency (if applicable) of control measures;
 - (b) The description, scope, and start date of pollution prevention measures; and
 - (c) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

ii. Water Quality Monitoring to Assess Attainment of Wasteload Allocations

- (1) **Task Description** – Permittees shall determine whether the TMDL wasteload allocations are attained.
- (2) **Implementation Level** – The City and County shall conduct attainment water quality monitoring activities as follows:
 - (a) **Sample Locations** – Two stations shall be monitored: the mouth of San Pedro Creek (Creek Mouth) and Pacifica State Beach (the original station, as of the TMDL’s adoption date of November 2012, which was located approximately 300 feet north of the Creek mouth, and at shin depth, originally referred to as Linda Mar #5 in the TMDL Staff Report, but currently referred to as Linda Mar #7). The locations of these stations are shown in the TMDL Staff Report.
 - (b) **Sampling Frequency** – The two attainment stations shall be monitored weekly on an ongoing basis for fecal indicator bacteria. The weekly sampling shall occur year-round regardless of weather conditions, provided the conditions are safe for field staff to collect the samples.
 - (c) **Sampling Constituents** – Samples collected from the Creek Mouth shall be analyzed for *E. coli* and total coliform. Samples collected from Linda Mar #5 station shall be analyzed for *Enterococcus*, fecal coliform, and total coliform.
 - (d) The City and County shall analyze the results of the attainment monitoring and compare the results to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL.
- (3) **Reporting** – In Annual TMDL Status and Monitoring Reports submitted on March 15 each year, the City and County shall analyze, summarize, and report the results of the ongoing attainment monitoring, as follows:
 - (a) The City and County shall complete a data evaluation, which shall focus on determining whether the TMDL wasteload allocations are being attained in the Creek and at the Beach.
 - (b) The indicator bacteria results from the attainment monitoring stations (Creek Mouth and original Linda Mar #5 station (currently called Linda Mar #7), located 300 feet north of the Creek mouth at shin depth) shall be compared to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL (Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach: Final Staff Report for Proposed Basin Plan Amendment. Water Board, 2012. Accessible at:

https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/pacificabacteria/Final%20Staff%20Report.pdf).

- (c) The data evaluation shall include tabulation and review of local rainfall data to determine whether the weekly attainment monitoring sampling events occurred during dry weather or wet weather.
- (d) An ongoing quantitative analysis of trends (from initial year) in bacteria densities and exceedances of applicable water quality objectives at the two attainment stations shall be conducted and reported annually.
- (e) A detailed and comprehensive assessment of wasteload allocation attainment by the end of year 4 of the Permit term shall be completed. If wasteload allocations are not achieved by the end of the Permit term, no later than 180 days prior to Permit expiration, the City and County shall submit a plan in their Report Of Waste Discharge, acceptable to the Executive Officer, that describes additional control measures or increased levels of existing control measures that will be implemented to prevent or reduce discharges of bacteria to storm sewer systems to attain wasteload allocations. The plan shall include implementation methods, an implementation schedule, and proposed milestones.

iii. Water Quality Monitoring – Characterize Bacteria Sources, Assess BMP Effectiveness

- (1) **Task Description** – The purpose of characterization monitoring is to better characterize indicator bacteria contributions from specific sources and to evaluate control measure effectiveness. The characterization monitoring shall provide data to:
 - (a) Characterize indicator bacteria densities in subwatersheds, storm drain outfalls, and pump stations that have not been sampled in the past. Results of the investigation may be used to drive future control measure actions.
 - (b) Establish baseline (or current) conditions against which future monitoring results can be compared following new or ongoing control measure implementation.
 - (c) Characterization monitoring shall be conducted every other year on a water year basis (i.e., October 1 through September 30), continuing on the existing ongoing monitoring schedule. Characterization monitoring shall assess E. coli densities throughout the San Pedro Creek watershed. Human-, horse-, and dog-specific genetic markers shall be analyzed for a subset of the samples to investigate whether these species contribute fecal contamination to the Creek. The

characterization monitoring shall be iterative in nature and allow for flexibility of design and details in future years. Subsequent years of characterization monitoring, at a minimum, shall have the same level of effort as previous years; however, in future years, based on the results of the previous monitoring, alternative sampling stations may be targeted, sampling intensities may be modified, sampling frequencies may be adjusted, and/or the species-specific genetic marker sampling may be revised.

- (2) **Implementation Level** – The City and County shall conduct characterization monitoring activities as follows:
- (a) **Sampling Locations** – while based on the previous year’s results appropriate sampling locations can be selected for each monitoring year, the “Creek Mouth” site shall always be sampled during events when species-specific genetic marker samples are collected.
 - (b) **Number of Samples** – in each monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.
 - (c) **Sampling Frequency** – the characterization stations shall be sampled a minimum of eight times over the course of the water year, as follows:
 - (i) **Wet season** – four sampling events shall be conducted during the wet season months (November through March). To the extent possible, wet season sampling events shall occur during wet weather, which as defined in the TMDL is any day (e.g. 24-hour period) with 0.1 inch of rain or more and the following three days;
 - (ii) **Dry season** – four sampling events shall be conducted during the dry season months (May through September).
 - (iii) In subsequent monitoring years, based on the results of the previous year’s monitoring, the sampling frequency may be modified, as appropriate, to provide the most useful results.
 - (d) **Constituents** – All samples shall be analyzed for *E. coli*. In addition, during each monitoring year, at a minimum, samples collected at four stations during four sampling events (two wet season, two dry season) shall be analyzed for human-, horse-, and dog-specific genetic markers to assess temporal and spatial fecal waste contributions from the targeted host species to the Creek and Beach.
 - (e) **Monitoring Protocols and Data Quality** – Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance

Project Plan (QAPP) for applicable parameters, including data quality objectives, field, equipment, and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

- (f) Future Revisions – Any and all changes to the characterization monitoring plan in future years shall be submitted to the Executive Officer for review and acceptance no later than 90 days prior to implementation.

(3) Reporting

- (a) In their Annual TMDL Status and Monitoring Reports the City and County shall submit a comprehensive Characterization Monitoring Report reporting on any data collected during the preceding October 1 through September 30 monitoring period.
- (b) Data evaluation shall focus on addressing the following questions:
 - (i) Which land uses and/or sources contribute most to bacteria impairments in San Pedro Creek watershed?
 - (ii) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed?
 - (iii) What are the multi-year indicator bacteria density trends in the Creek and at the Beach (i.e., do control measures appear to be reducing bacteria)?

- (c) As appropriate, the Report shall include the following:
 - (i) Immediately following the Table of Contents, a Data Tables section that includes all the data collected pursuant to Provision C.14.b.iii. and contains the following information pertaining to the foregoing monitoring period:
 - a. A map showing all monitoring locations;
 - b. Immediately following the map, a single completed Locations and Parameters Table containing the following columns or rows for each location sampled: numeric site identifier, a short-hand site name such as "Creek Mouth," latitude, longitude, and parameters assessed;
 - c. Immediately following the Locations and Parameters Table, a single completed Results Table containing the following columns or rows for each location sampled: the short-hand site name and datum/result for each constituent analyzed. Constituents that exceed applicable water quality objectives shall be highlighted.
 - (ii) For all data, a statement of the data quality.
 - (iii) An analysis of the data, which includes the following:
 - a. Basic descriptive statistics using indicator bacteria data;
 - b. Identification and evaluation of any controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed;
 - c. Identification and analysis of any trends in stormwater or receiving water quality; and
 - d. Consideration of variability in the data sets.
 - (iv) A discussion of the data, which shall:
 - a. Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin or the Ocean plans;
 - b. Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - c. Identify and prioritize water quality problems;
 - d. Identify potential sources of water quality problems;

- e. Describe follow-up actions;
- f. Evaluate the effectiveness of existing control measures; and
- g. Identify management actions needed to address water quality problems.

C.14.c. City of San Mateo Marina Lagoon Beaches Bacteria Controls

The City of San Mateo (City) shall implement the actions in this subprovision to control fecal indicator bacteria. For each requirement, the City shall focus implementation in areas where benefits are most likely to accrue, i.e., where bacteria reduction is likely to reduce bacteria densities in San Mateo Lagoon and particularly at Parkside Aquatic Park Beach and Lakeshore Park Beach. Many of the required implementation actions are described in the City's TMDL Basin Plan Amendment Implementation Plan, 2018 (TMDL Implementation Plan). This subprovision implements the urban runoff requirements of the San Francisco Bay Beaches Bacteria TMDL (TMDL) applicable to the City.

i. Control Measures to Achieve Indicator Bacteria Wasteload Allocations

- (1) **Task Description** – The City shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to San Mateo Lagoon to the maximum extent practicable.
- (2) **Implementation Level** – In order to comply with this element:
 - (a) The City shall enhance its efforts to prohibit potential illicit discharges into its storm sewer system.
 - (b) The City shall expand or enhance dog waste management strategy, including installing and/or maintaining dog waste clean-up signs, waste bag dispensers, and trash cans at a minimum of two parks/open spaces near San Mateo Lagoon beaches.
 - (c) The City shall enhance its public outreach and education regarding proper management of pet waste management, dumpsters and garbage bins; proper outdoor washdown procedures (restaurant mats, dining areas, commercial areas, mobile cleaner operations) by taking a minimum of three of the following actions:
 - (i) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Lagoon.
 - (ii) Distribute a mailer to residents and businesses describing the adverse impact on water quality and recreation of improper pet waste management.

- (iii) Add information to the City website about the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Lagoon and public health.
- (iv) Create and broadcast a pre-rain pet waste cleanup public service announcement to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Lagoon.
- (v) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
- (d) The City shall continue its goose control program, as described in its TMDL Implementation Plan.
- (e) The City shall continue implementing its “Illegal Dumping Screening Program,” its “Spill, Dumping, and Complaint Response Program,” and its “Commercial/Industrial Business Inspection Plans,” including implementing associated enforcement, with a focus near the beaches as appropriate.
- (f) Once during the Permit term, determine if boaters in San Mateo Lagoon could be a source of bacteria; if yes, conduct or enhance outreach to improved boaters’ behaviors regarding bacteria sources (e.g., litter and human waste).

(3) Reporting

- (a) In each Annual Report, the City shall summarize the actions it took to satisfy the requirements in Provision C.14.c.i.(2). during the foregoing October 1 through September 30 period. This report shall include:
 - (i) The number, type, and locations and/or frequency (if applicable) of control measures; and
 - (ii) The description and scope of pollution prevention measures; and
 - (iii) A data table and graphs showing Enterococcus data collected during the reporting year for the two San Mateo Lagoon beaches, Parkside Aquatic Park Beach and Lakeshore Park Beach.
- (b) For the Annual Report due in 2023, quantitatively and qualitatively evaluate the effectiveness of the City’s actions toward wasteload allocation attainment and modify or refocus control measure implementation efforts as appropriate.

ii. Phase Two Measures

- (1) **Task Description** – If wasteload allocations are not met by December 13, 2021, the City shall implement additional bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to San Mateo Lagoon.
- (2) **Implementation Level** – In order to comply with this element:
 - (a) By July 1, 2022, the City shall submit a plan describing BMPs being implemented and additional BMPs that will be implemented to reduce discharges of bacteria to the beach. The plan shall include all actions described in Provision C.14.a that are likely to reduce bacteria loads to San Mateo Lagoon and particularly at Parkside Aquatic Park Beach and Lakeshore Park Beach. The plan also shall include an implementation schedule and milestones.
 - (b) By July 1, 2022, the City shall implement this plan.
 - (c) By September 30, 2022, the City shall submit a supplemental monitoring plan (supplemental to ongoing beach monitoring) to investigate remaining bacteria sources to the beach. This plan may develop data and a quantitative rationale to support (i) locations and types of enhanced bacteria BMPs, and/or (ii) revision of the numeric targets to reflect bacteria contributions from non-controllable sources. Include an implementation schedule.
- (3) **Reporting** – Starting with the 2023 Annual Report and for Annual Reports submitted in following years, the City shall summarize the actions it took to satisfy the requirements in Provision C.14.c.ii.(2) during the foregoing October 1 through September 30 period. This report shall include:
 - (a) The number, type, and locations and/or frequency (if applicable) of control measures;
 - (b) The description and scope of pollution prevention measures; and
 - (c) A data table and graphs showing enterococcus data collected during the reporting year for the two San Mateo Lagoon beaches, Parkside Aquatic Park Beach and Lakeshore Park Beach.

iii. Planning for Future Actions

- (1) **Task Description** – If wasteload allocations are not met by December 13, 2026, Permittees shall prepare a plan for additional actions to attain the water quality objective in the next permit term.
- (2) **Implementation Level** – Permittees shall prepare a plan that includes an assessment of bacteria sources and describes additional control

measures or increased levels of existing control measures that will be implemented to attain bacteria water quality objectives. The plan shall include an implementation schedule and proposed milestones. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.

- (3) **Reporting** – Submit the plan no later than 180 days prior to Permit expiration.

C.14.d. City of Half Moon Bay and San Mateo County Bacteria Controls

The City of Half Moon Bay (City) and San Mateo County (County) shall implement the actions in this subprovision to control bacteria. The City and County shall focus implementation of bacteria control measures in areas where benefits are most likely to accrue, i.e., where controls are likely to reduce bacteria mass in Pillar Point Harbor and Venice Beach. The goal of this subprovision is to implement the municipal stormwater runoff requirements of the Pillar Point Harbor and Venice Beach Bacteria TMDL and achieve the TMDL wasteload allocations. The City and County may comply with any requirement of this subprovision through a collaborative effort.

i. Control Measures to Achieve Bacteria Wasteload Allocations

- (1) **Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies within their respective jurisdictions to prevent or reduce discharges of bacteria from storm drain systems to meet the municipal stormwater runoff TMDL wasteload allocations listed in the Pillar Point Harbor and Venice Beach Bacteria TMDL.
- (2) **Implementation Level** – To comply with this element:
 - (a) The City and County each shall prepare an Initial Report acceptable to the Water Board Executive Officer that describes actions they are taking and will take to prevent or reduce discharges of bacteria to and from storm sewer systems. This report shall be submitted to the Water Board **by July 1, 2022**. The report shall include a schedule, timeline, or frequency of implementation activities for all actions, including, but not limited to, the actions described in Provision C.14.d.i.(2).(b), below.
 - (b) The City and County shall prohibit and prevent, to the maximum extent possible, discharges of bacteria into the storm sewer system within five years of the effective date of the TMDL as follows:
 - (i) Illicit sanitary sewer connections: The City and County shall train the staff responsible for enforcing industrial and commercial site

control and for detecting and eliminating illicit discharges to investigate potential connections of sanitary sewer lines to stormwater lines. The City and County shall ensure that staff conduct illicit sanitary sewer connection investigations and include such investigations in their routine inspections as well. The City and County shall use enforcement authorities to ensure transport to surface waters of the following potential bacteria sources is minimized:

- (ii) Illicit discharges to the MS4, by increasing illicit discharge investigations in the vicinity of Pillar Point Harbor and Venice Beach
 - a. Roof and exterior washoff of commercial and industrial structures and surfaces, where these sources are likely to contain bacteria, such as from rodent and bird wastes, that are likely to be discharged to receiving water
 - b. Outdoor garbage and recycle bins
 - c. Outdoor floor mat washoff
 - d. Portable toilet spills and leakage
- (iii) Human waste from homeless encampments, by implementing Provision C.14.a.iii in areas likely to discharge to the beaches;
- (iv) Pet waste
 - a. Develop and implement a visual inspection program to identify high pet waste accumulation areas and develop a cleanup plan for these areas, including specific actions before winter rains;
 - b. Install new or additional dog waste cleanup signs, waste bag dispensers, and trash bins in high dog waste accumulation areas;
 - c. Evaluate and improve the service frequency of dog waste bins, as needed; and
 - d. Enhance pet waste public outreach and education campaign that includes at least three of the following:
 - Prepare and broadcast public service announcements regarding pet waste management and associated impacts to the beaches and their catchments on social media, local television, and/or local newspapers;

- Distribute a mailer to residents and businesses describing proper pet waste management, and the adverse impact to the beaches and those recreating on them from improper pet waste management;
- Add to or maintain web pages on the City and County websites with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality and public health;
- Broadcast a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the beaches; and
- Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).

e. The City and County shall include additional actions described in Provision C.14.a. in their Initial Reports and in their actions to prohibit and prevent discharges of bacteria into the storm sewer system to the extent and in the locations they deem helpful for achieving the TMDL wasteload allocation.

(3) **Reporting** – No later than March 30 of each year, the City and County shall submit a comprehensive TMDL Implementation Status and Monitoring Report, reporting on the specific control measures (as listed in Provision C.14.d.i.(2)) that have been implemented in the TMDL Project Area during the foregoing July 1 through June 30 period. This report shall include:

- (a) The number, type, and locations and/or frequency of control measures;
- (b) The description, scope, and start date of pollution prevention measures;
- (c) Listing, timeline, and discussion of the actions scheduled for implementation during the upcoming year; and
- (d) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

ii. Water Quality Monitoring

- (1) **Task Description** – The City and County shall ensure the beaches are sampled weekly (i.e., that current bacteria sampling continues) and shall evaluate beach monitoring data. The purposes of the water quality monitoring are to determine whether the TMDL wasteload allocations are attained; further identify and characterize the source areas or land uses with the greatest bacteria contributions; and direct adaptive implementation of controls to reduce or eliminate bacteria discharges from different sources over time.
- (2) **Implementation Level** – At a minimum, the City and County shall continue monitoring the beaches as required under California Health and Safety Code section 115880 and evaluate the resulting data. The City and County may collaboratively or individually develop and conduct a source assessment study to better characterize sources and spatial and temporal extent of bacteria impairment at the beaches and to evaluate the contribution of bacteria from natural sources.
- (3) **Reporting** -- No later than March 30 of each year, the City and County shall submit a comprehensive TMDL Implementation Status and Monitoring Report describing the monitoring that has been conducted in the TMDL Project Area during the foregoing October 1 through September 30 period. The City and County are encouraged to collaborate so as to prepare a single report on all the data. This report shall include:
 - (a) Data evaluation that addresses the following questions:
 - (i) Are the TMDL targets and allocations met at the beaches?
 - (ii) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) being contained and do control measures appear to be effective in reducing bacteria loads?
 - (iii) Which land uses and/or sources contribute most to bacteria impairments?
 - (b) The Report shall include the following:
 - (i) Information about the sampling locations, timing and frequency of sampling, analytical method(s), and a map of monitoring sites
 - (ii) An analysis of the data, which includes the following:
 - a. Basic descriptive statistics using indicator bacteria data
 - b. Identification and evaluation of available data that indicate the presence of controllable sources of fecal contamination (e.g., human, horses, and dogs)

- c. Identification and analysis of any trends in stormwater or receiving water quality
 - d. Consideration of variability in the data sets.
- (iii) A discussion of the data, which shall:
- a. Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Pillar Point Harbor and Venice Beach Bacteria TMDL;
 - b. Identify potential sources of water quality problems;
 - c. Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - d. Evaluate the effectiveness of existing control measures; and
 - e. Identify and describe the follow-up management actions needed to address water quality problems.

iii. Planning for Phase Two Actions

- (1) **Task Description** – If wasteload allocations are not met within five years of the TMDL effective date, Permittees shall develop a Phase Two Report that describes the actions being implemented and additional actions that will be taken to reduce the discharge of bacteria to the beaches.
- (2) **Implementation Level** – In preparing the Phase Two Report, Permittees shall assess bacteria sources; describe control actions taken; and describe additional control measures or increased levels of existing control measures that will be implemented to attain bacteria water quality objectives. The report shall contain an implementation schedule and proposed milestones. Additional monitoring studies to identify sources, track, and/or quantify the risk of bacteria in the receiving water may be included in this effort.
- (3) **Reporting** – Submit the Phase Two Report within five years of the TMDL effective date.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

- i. Discharge Type** – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:
 - (1) Flows from riparian habitats or wetlands;
 - (2) Diverted stream flows;
 - (3) Flows from natural springs;
 - (4) Rising ground waters;
 - (5) Uncontaminated and unpolluted groundwater infiltration;
 - (6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;
 - (7) Pumped groundwater from drinking water aquifers (excludes well development); and
 - (8) NPDES permitted discharges (individual or general permits).
- ii. Implementation Level** – The non-stormwater discharges listed in Provision C.15.a.i, above, are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b, below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed

and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-vi, below.

i. Discharge Type – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

(1) Pumped Groundwater from Non-Drinking Water Aquifers

Groundwater pumped from a monitoring well, used for groundwater basin management, which is owned and/or operated by a Permittee is allowed if the following requirements are met:

- (a) **Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:
 - (i) The water samples shall meet water quality standards, including effluent limitations in the VOC and Fuel General Permit, NPDES Permit No. CAG912002.
 - (ii) The water samples shall be analyzed using approved U.S. EPA methods: (a) U.S. EPA Method 8015 Modified for total petroleum hydrocarbons; (b) U.S. EPA Method 624.1 and 625.1 or equivalent for volatile and semi-volatile organic compounds, respectively; and (c) approved U.S. EPA methods to meet the triggers for the metals listed in the General Permit discussed in Provision C.15.b.i.(1)(a)(i), above.
 - (iii) The water samples shall be analyzed for pH and turbidity.

If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

- (b) **Required BMPs and Monitoring** – When greater than 2,500 gallons per day of uncontaminated (meeting the criteria in Provision C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:
 - (i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream.

- (ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.
 - (iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of banks, nuisance, contamination, and excess sedimentation in the receiving waters.
 - (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.
 - (v) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.
 - (vii) The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (c) If the Permittee is unable to comply with the criteria in Provision C.15.b.i.(1)(b)(i)-(vii), discharge shall cease immediately and the Permittee shall employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES VOC and Fuel General Permit, or Groundwater General Permit, as appropriate.
- (d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

(2) Pumped⁶⁰ Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

- (a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements. Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.
- (b) If the groundwater cannot be discharged to a landscaped area or bioretention unit and the discharge is greater than 2,500 gallons per day, it can only be considered for discharge once the following sampling is done to verify that the discharge is uncontaminated:
- (i) The discharge shall meet water quality standards, including effluent limitations in the VOC and Fuel General Permit, NPDES Permit No. CAG912002.
- (ii) The Permittees shall require that water samples from these discharge types be analyzed using the following approved U.S. EPA methods:
- U.S. EPA Method 8015 Modified for total petroleum hydrocarbons, and U.S. EPA Method 624.1 and 625.1 for volatile and semi-volatile organic compounds, respectively.
 - The sufficiently sensitive (as identified in Attachment G of NPDES Permit No. CAG912002) approved U.S. EPA Methods (40 C.F.R Part 136) for the constituents listed below that meet the corresponding Reporting Limits:

⁶⁰ Pumped groundwater not exempted in Provision C.15.a, or conditionally exempted in Provision C.15.b.i.(1).

Constituent	Reporting Limit
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	0.90 µg/l
Chromium III	50 µg/l
Chromium VI	8.1 µg/l
Copper	3.4 µg/l
Lead	2.6 µg/l
Manganese	50 µg/l
Mercury	4 ng/l
Nickel	10 µg/l
Selenium	4.1 µg/l
Silver	1.1 µg/l
Thallium	1.7 µg/l
Zinc	47 µg/l
Cyanide	2.9 µg/l
Chlorine, total residual	0.05 µg/l
Total Petroleum Hydrocarbons	50 µg/l

- (c) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in Provision C.15.b.i.(2)(b), above, the Permittees shall require the following:
- (i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream or if accessing the sampling points poses safety to personnel.
 - (ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.
 - (iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.
 - (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.

- (v) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.
 - (vii) The pH of discharged water shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (d) If a Permittee determines that a discharger or a project proponent is unable to comply with the criteria in Provision C.15.b.i.(2)(c)(i)-(vii), the Permittee shall require the discharge to cease immediately and require that the discharger employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES VOC and Fuel General Permit (NPDES Permit No. CAG912002), or Groundwater General Permit (NPDES Permit No. CAG912004), as appropriate.
- (e) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be reused or directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Type – Emergency Discharges of Firefighting Water and Foam

- (1) Emergency Discharges – Discharges resulting from emergency firefighting activities.
- (2) Regional Coordination
 - (a) Permittees shall collectively convene a regionwide Firefighting Discharges Working Group (Working Group) together with Water Board staff – and other stakeholders identified in Provision C.15.b.iii.(2)(vi), below – to identify and evaluate opportunities to reduce the impacts of emergency discharges to the MS4 associated

with firefighting activity. The Permittees shall collectively (e.g., through the Working Group):

- (i) Prior to the submittal of the Firefighting Discharges Report, convene the Working Group at least twice per year. Thereafter, convene the Working Group at least annually.
- (ii) Assess the adequacy of existing BMPs and standard operating procedures (SOPs) to address the potential adverse water quality impacts of firefighting water and foam discharged during emergencies (e.g., containment and cleanup),⁶¹ including coordination within and between municipal departments, districts and jurisdictions, coordination between firefighting personnel and containment and cleanup crews, coordination with contracted staff, and coordination with relevant agencies (e.g., CalFire), as appropriate.

If the existing BMPs and SOPs need updates or are otherwise inadequate, suggest changes to those BMPs and SOPs so that they are updated and adequate. If new BMPs and SOPs are needed, recommend model BMPs and SOPs.

- (iii) Assess the adequacy of existing resources (e.g., MS4 maps and maps that identify environmentally sensitive areas) used to determine if and how firefighting water and foam discharged during emergencies will impact receiving waters,⁶² in order to address pollutant discharges (e.g., by facilitating containment and cleanup).
- (iv) Investigate which firefighting foams are the least environmentally harmful (i.e., have the least adverse water quality and beneficial use effects, including those related to biodegradation, biomagnification, bioaccumulation, and acute and chronic toxicity), both for Class A foams and Class B foams. Then, develop SOPs to use the least environmentally harmful firefighting foams (and dispose of the more environmentally harmful foams) and to reduce the use of firefighting foams, without jeopardizing the protection of life or property, during emergencies.

⁶¹ The Working Group does not necessarily have to review every single Permittee's BMPs and SOPs. It may review a representative subset.

⁶² The Working Group does not necessarily have to review every single Permittee's resources. It may review a representative subset.

- (v) Prepare outreach materials on containment and cleanup BMPs and SOPs for contractors that are hired by private parties to participate in the containment and cleanup of discharges of firefighting water and foam associated with firefighting activities within their jurisdictions. Additionally, prepare outreach materials – regarding good housekeeping practices and preventive measures – for sites that are prone to firefighting emergencies. Distribute those outreach materials to all such contractors and sites by September 30, 2025.

Subsequently, if it is identified that the outreach materials need to be revised or updated, they shall be revised or updated, and then redistributed.

- (vi) Pursue coordination, information sharing, feedback and Working Group participation, from relevant agencies and organizations such as the California Department of Forestry and Fire Protection (Cal Fire), the California Department of Toxic Substances Control (DTSC), the U.S. Forest Service (USFS), the State and Regional Water Boards, permittees of other NPDES municipal stormwater permits, other state and federal agencies, and external workgroups (such as Petro-Chemical Mutual Aid), regarding interagency coordination and communication, BMPs, SOPs, and the least environmentally harmful firefighting foams.
- (vii) Discuss reporting on emergency discharges of firefighting water and foam. The purpose of this reporting is first to provide transparency about the usage and water quality impacts of firefighting water and foam, and second to track reductions in those impacts over time, which is an anticipated outcome of the implementation of Provision C.15.b.iii.

This shall include discussion of the timing of such reporting, and how that reporting will be submitted to the Water Board. This shall additionally include discussion of how reporting is triggered (e.g., if a certain level of discharge enters the MS4 system, if any level of discharge enters a receiving water, and if any level of PFAS foam is used pursuant the exemptions in SB 1044), as well as the content of the reporting (e.g., the date and time of the discharge, Material Safety Data Sheet (MSDS) and any supplemental information for that foam, the quantity of water and foam concentrate used, the quantity and rate of water and foam concentrate discharged to the MS4 and/or receiving water, the point of discharge to the MS4 and/or receiving water, and

controls implemented to contain and/or mitigate discharges and impacts).

- (b) Reporting – The Permittees shall collectively submit a Firefighting Discharges Report by September 30, 2025, that describes progress on, and recommendations regarding, the implementation of the items listed in Provision C.15.b.iii.(2)(a)(i)-(vii). The Firefighting Discharges Report shall be updated as needed on an ongoing basis, to incorporate recommendations by the Working Group.

(3) Ongoing Implementation Practices

- (a) When the Firefighting Discharges Report is submitted, the Permittees shall begin implementation of the recommendations included therein.
- (b) Permittees shall ensure proper BMPs and SOPs are included in contracts for non-municipal (contracted) staff hired by Permittees to assist with containment and cleanup, and to assist with prevention and mitigation of adverse impacts, of discharges associated with firefighting emergencies.
- (c) For large industrial sites within Permittees' jurisdictions – such as IGP sites, gas plants, gas concentration facilities, and chemical plants – Permittees shall evaluate the adequacy of those sites' BMPs and SOPs for the prevention, containment and cleanup of emergency firefighting discharges into storm drains and receiving waters within Permittees' jurisdictions, and cause those BMPs and SOPs to be improved as appropriate.
- (d) By June 30, 2027, Permittees shall require all municipal staff and contracted staff hired by Permittees that participate in the containment and cleanup of (and as appropriate, that assist with any other activities associated with mitigating the adverse environmental impacts of) discharges of firefighting water and foam from firefighting emergencies within their jurisdictions to attend at least one training on containment and cleanup BMPs and SOPs (and other BMPs and SOPs, as appropriate). Trainings may be region-wide, program wide, or Permittee-specific. Permittees are encouraged to make these trainings available to contractors hired by private parties.
- (e) Reporting
 - (i) In their Annual Reports, Permittees shall report on the implementation of Provisions C.15.b.iii.(3).(a)-(c).
 - (ii) In the 2027 Annual Reports, Permittees shall report on trainings conducted pursuant to Provision C.15.b.iii.(3)(d), including the

date(s) of training(s), topics covered, and the percentage of applicable municipal and contracted staff involved in containment and cleanup activities in attendance.

(4) Required BMPs

- (a) The Permittees shall implement and/or require firefighting personnel acting within their jurisdictions to implement BMPs and SOPs for emergency discharges – in order to reduce potential and actual water quality impacts – to the extent that the implementation of such BMPs does not interfere with immediate emergency response operations or impact public health and safety.⁶³
- (b) During emergency firefighting situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). Permittee staff, contractors, or firefighting personnel shall control the pollution threat from their activities during emergency firefighting situations to the extent that time and resources allow.

(5) Reporting

- (a) Upon submittal of the Firefighting Discharges Report, Permittees shall implement the reporting recommendations and guidance therein.
- (b) Otherwise, reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

(1) Required BMPs

- (a) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their storm drain systems.
- (b) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, or wash cars at commercial car wash facilities.

⁶³ Examples of BMPs to be considered are listed in the Fact Sheet. Where firefighting personnel may not be under the direct control of a Permittee, implement BMPs and SOPs, such as coordination and communication, identified in the Firefighting Discharges Report.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) Required BMPs

- (a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algaecide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.
- (b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.
- (c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection⁶⁴ to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.
- (d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.
- (e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from Provision C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.

- (2) Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa, and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

⁶⁴ This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

- (1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:
 - (a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;
 - (b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;
 - (c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;
 - (d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and
 - (e) Implementing the Illicit Discharge Enforcement Response Plan from Provision C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their storm drain systems.
- (2) **Reporting** – The Permittees shall provide implementation summaries in each Annual Report.

C.16. Discharges to Areas of Special Biological Significance

This Provision applies to stormwater discharges from the County of San Mateo into the James V. Fitzgerald Marine Reserve Area of Special Biological Significance (ASBS). As set forth in the Fact Sheet, the State Water Board granted an exception to the ASBS discharge prohibition (ASBS Exception) in the Ocean Plan to applicants, including the County of San Mateo, for their existing stormwater discharges into ASBSs, provided they receive authorization to discharge by an NPDES permit; the discharges comply with all applicable terms, prohibitions, and special conditions of Attachment B - Special Protections (Special Protections) attached to and part of the ASBS Exception; and the discharges are essential for flood control or slope stability, designed to prevent soil erosion, occur only during wet weather, and are composed of only stormwater runoff. (See State Water Board Resolution No. 2012-0012, as amended by Resolution No. 2012-0031.) This Provision serves as the NPDES authorization for the County of San Mateo to discharge stormwater into the ASBS, provided the discharge meets the requirements below.

C.16.a. Discharges to the James V. Fitzgerald Marine Reserve ASBS

- i. If the County of San Mateo meets all of the conditions set forth in Provision C.16.a.i. and C.16.a.ii., its stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS from MS4 outfalls that were constructed or were under construction prior to January 1, 2005, are permitted. Permitted discharges must comply with the following:
 - (1) Be essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (2) Be managed or controlled to prevent soil erosion;
 - (3) Occur only during wet weather; and
 - (4) Be composed only of stormwater runoff, except as provided in the Special Protections of the ASBS Exception.
- ii. The County of San Mateo shall comply with all applicable terms, prohibitions, and special conditions of the Special Protections of the ASBS Exception, including monitoring requirements, as they apply to stormwater. The Special Protections are hereby incorporated by reference into this Order and attached hereto as Attachment F. Notwithstanding anything to the contrary in this Order, the County of San Mateo shall not alter the natural ocean quality of the ASBS; shall not discharge trash into the ASBS; and shall not discharge non-stormwater into the ASBS except as provided in the Special Protections. As required by the Special Protections, the County of San Mateo shall address the preceding requirements (other than trash) in an ASBS Compliance Plan to

be approved by the Regional Water Board Executive Officer and comply with the compliance schedule set forth in the Special Protections.

iii. Reporting

- (1) In addition to the monitoring requirements of the Special Protections, the County of San Mateo shall submit a copy of its ASBS Compliance Plan for approval by the Regional Water Board Executive Officer.
- (2) If the results of any monitoring required under the Special Protections indicate that stormwater runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the County of San Mateo shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results according to the guidelines provided in the Special Protections.
 - (a) Within 30 days of the approval of the report by Regional Water Board Executive Officer, the County of San Mateo shall revise its ASBS Compliance Plan according to the guidelines provided in the Special Protections.

C.17. Discharges Associated with Unsheltered Homeless Populations

The purpose of this Provision is to identify and ensure the implementation of appropriate control measures, by all Permittees, to address non-stormwater discharges into MS4s associated with unsheltered homeless populations, including discharges from areas where unsheltered people congregate (e.g., formal and informal encampments including, but not limited to, informal tent or small cabin encampments, areas where people living in vehicles park, and safe parking areas). This Provision refers to such discharges collectively as discharges associated with homelessness.

C.17.a. Permittee Requirements

i. Task Description

- (1) Permittees shall use results from biennial point-in-time census surveys and related information, such as municipal reports, databases, complaint logs, and other efforts, to gain a better understanding of unsheltered homeless population numbers within the Permittee's jurisdiction, the locations of unsheltered homeless residents, discharges and water quality-related impacts associated with homelessness, and associated sanitation-related needs.
- (2) To encourage ongoing regional, countywide, and municipal coordination efforts, Permittees shall collectively develop a best management practice report that identifies effective practices to address non-storm water discharges associated with homelessness into MS4s that impact water quality and specific milestones for reducing such discharges within a given timeframe. The report shall:
 - (a) Describe practices that may be implemented by Permittees, including those currently being implemented, to address discharges associated with homelessness that are impacting water quality;
 - (b) Identify regional and/or countywide efforts and implementation actions to address discharges associated with homelessness (including how those efforts and actions have been affected by unsheltered homeless population growth). Include recommendations for engaging in these efforts and incorporating discharge-reduction strategies that also help meet the unsheltered population's clean water needs; and
 - (c) Identify actions taken during the COVID-19 pandemic to reduce the spread of the virus in homeless populations, such as temporarily housing homeless people in hotels, that may have reduced discharges associated with homelessness. Permittees shall consider the practicability of such actions for longer-term implementation.

This task's broader goals are to recognize non-stormwater pollutant sources associated with unsheltered homeless populations, reasons for discharges, and means by which they occur, and develop useful information that can be used toward prioritizing individual Permittee and collaborative best management practices for reducing or managing such discharges, while ensuring the protection of public health. Examples of collaborative implementation programs could include collaborative efforts between Permittees, Caltrans, sanitary sewer agencies, railroads, non-governmental organizations (NGOs), social service agencies and organizations, and other agencies.

ii. Implementation Level

- (1) Each Permittee shall submit a map identifying, within its jurisdiction, the approximate location(s) of unsheltered homeless populations, including homeless encampments and other areas where other unsheltered homeless people live. The map shall identify those location(s) in relation to storm drain inlets and existing streams, rivers, flood control channels, and other surface water bodies within the Permittee's jurisdiction. The map shall be updated once during the Permit term, in 2025. Where Permittees are working collaboratively to address discharges associated with homelessness, they may collaborate to submit a joint map that covers their respective jurisdictions.
- (2) Permittees shall report on the programmatic efforts being implemented within their jurisdiction, or at the countywide or regional level, to address MS4 discharges associated with homelessness. Examples of these efforts may include, but are not limited to: funding initiatives; adoption of ordinances to implement service programs; coordination with social services departments and NGOs; efforts to establish relationships with homeless populations; and alternative actions to reduce discharges to surface waters associated with homelessness, such as efforts towards providing housing, jobs, and related services for residents experiencing homelessness.
- (3) Each Permittee shall identify and implement appropriate best management practices to address MS4 discharges associated with homelessness that impact water quality, including those impacts that can lead to public health impacts. In addition, Permittees shall also evaluate and assess the effectiveness of those practices, specifically by reporting on the BMP control measures being implemented, the approximate portion of the Permittee's unsheltered homeless population and locations being served by those control measures, and the portion and locations of the Permittee's unsheltered homeless population not reached, or not fully reached by the implemented control measures. Examples of actions that

may be implemented include, but are not limited to, access to emergency shelters; the provision of social services and sanitation services; voucher programs for proper disposal of RV sanitary sewage; establishment of designated RV “safe parking” areas or formalized encampments with appropriate services; provision of mobile pump-out services; establishing and updating sidewalk/street/plaza cleaning standards for the cleanup and appropriate disposal of human waste; and establishing trash and waste cleanup or pickup programs within the Permittee’s jurisdiction, or at the countywide or regional level.

- (4) Permittees shall use the information generated through the biennial point-in-time census surveys and related information, and the regional coordination tasks (as described above) to review and update their implementation practices.

iii. Reporting

- (1) With the 2023 Annual Report, Permittees shall collectively submit, acceptable to the Executive Officer, a best management practice report as described in Provision C.17.a.i.(2).
- (2) With the 2023 and 2025 Annual Reports, Permittees shall submit a map as described in Provision C.17.a.ii.(1).

With the 2023 and 2025 Annual Reports, each Permittee shall report on the best management practices being implemented and include the effectiveness evaluation reporting required in Provision C.17.a.ii.(3) and additional actions or changes to existing actions that the Permittee will implement to improve existing practices.

C.18. Control of Sediment Discharges from Coastal San Mateo County Roads

San Mateo County shall implement the following control program for sediment. San Mateo County shall perform and report on the control measures according to this Provision, which implements requirements of the Pescadero-Butano Sediment TMDL and actions being taken on San Gregorio Creek to reduce sediment delivery from road-related erosion on San Mateo County-maintained roads to stream channels. For the purpose of this Provision, road-related erosion includes, but is not limited to, erosion of the road surface, road shoulder, road drainage structures such as ditches and culverts, and erosional features such as gullies, landslides, or sloughing that are road-related. Road-related means either i) the road is the primary cause of an observed erosion feature that, without the road, would not have formed or ii) the road is significantly increasing erosion rates from an erosion feature that existed prior to road construction.⁶⁵ This Provision does not apply to erosion sites that are not road-related, such as erosion from a private property that discharges onto a County-maintained road during a rain event. This Provision applies to San Mateo County-maintained roads in the Pescadero and Butano Creek watersheds (Pescadero-Butano Creek watershed), and in the San Gregorio Creek watershed in San Mateo County. This Provision is in addition to and does not supersede Provision C.2.e for Rural Road and Public Works Construction and Maintenance.

C.18.a. Road Erosion Inventory

- i. **Task Description** – San Mateo County shall prepare a road erosion inventory to identify and prioritize actions to reduce road-related erosion from hydrologically connected County roads. Hydrologic connectivity refers to the length or proportion of a road that drains runoff directly to streams or other water bodies. A hydrologically connected road is any road or road segment that has a continuous surface flow path to a natural stream channel during a storm runoff event.⁶⁶ A suitable design runoff event for most purposes is a 1-year 6-hour storm, with antecedent moisture conditions corresponding to the wettest month of the year. Connectivity usually occurs through road ditches, road surfaces, gullies, or other drainage structures or disturbed surfaces.

⁶⁵ For example, a landslide that existed prior to road construction would not be a road-related erosion feature, but a significant increase in erosion from the landslide caused by a poorly located road cross-drain would be a road-related erosion feature. Only the increased erosion caused by the cross-drain would need to be addressed under this provision.

⁶⁶ Weaver, W.E., Weppner, E.M. and Hagans, D.K. 2015. *Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads (Rev. 1st ed.)*, prepared by Pacific Watershed Associates for Mendocino County Resource Conservation District, Ukiah, California, pp. 8 – 10, 50 – 51, and 332.

ii. Implementation Level – To comply with this subprovision, San Mateo County shall:

- (1) Inventory all San Mateo County roads and include the following information: i) road location; ii) road segments that are hydrologically connected, iii) type of road (e.g., all-weather, seasonal, or abandoned); and iv) type of road surface (e.g., paved, gravel, or native soil).

For hydrologically connected road segments only, the Permittee shall comply with (2), (3), and (4) as follows:

- (2) All road-related erosion sites with the potential to discharge at least 5 cubic yards of sediment to streams or other water bodies shall be documented. At a minimum, the location, type, and approximate dimensions of the erosion feature, an estimate of the sediment volume that could erode, its potential for delivery to a waterbody (e.g., high, moderate, or low), a site photo, a brief description of the proposed treatment for erosion repair, and permits required for the repair shall be documented.
- (3) The location, shape (e.g., circular, elliptical, arch, box), size, and condition of all culverts along the roadway shall be documented. The following shall also be assessed:
 - (a) whether the culvert opening is clear and free of debris or sediment,
 - (b) the potential for the culvert to plug with debris carried from upstream during future runoff events; and
 - (c) the potential for flow diversion onto the roadway if the culvert is overtopped during a future runoff event.

Culvert plugging and flow diversion potential shall at a minimum be documented as 'none,' 'low,' 'moderate,' or 'high,' consistent with appropriate standards.^{67,68,69}

- (4) For culverts with a moderate to high plugging potential, the Permittee shall develop a brief description of the proposed improvement(s), priority for treatment, and required permits.

iii. Reporting – The road erosion inventory for the Pescadero-Butano Creek watershed shall be submitted to the Water Board in the 2023 Annual Report. The road erosion inventory for the San Gregorio Creek watershed shall be submitted to the Water Board in the 2025 Annual Report. The road erosion inventory shall be submitted in ArcGIS and Google Earth KML format with an accompanying report that provides all the information listed in the subprovision above, in addition to:

- (1) A summary table for both the Pescadero-Butano Creek and San Gregorio Creek watersheds that lists the total drainage area, the total length of all San Mateo County roads, the total length of all hydrologically connected San Mateo County roads; and the percentage of unpaved San Mateo County roads that are hydrologically connected.
- (2) Summary tables documenting the results of the road erosion inventory by watershed, where watershed means either the Pescadero-Butano Creek watershed or the San Gregorio Creek watershed.

New erosion sites identified during routine patrols shall be added to the road erosion inventory. San Mateo County shall provide a status update of these new erosion sites each year as part of its Annual Report.

C.18.b. Prioritized List and Schedule of Actions

- i. Task Description** – Based on the results of the road erosion inventory (C.18.a), San Mateo County shall develop a prioritized list and schedule of

⁶⁷ Weaver, W.E., Weppner, E.M. and Hagans, D.K. 2015. *Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads (Rev. 1st ed.)*, prepared by Pacific Watershed Associates for Mendocino County Resource Conservation District, Ukiah, California, pp. 99 – 106 and 136 – 150.

⁶⁸ Cafferata, P., Lindsay, D., Spittler, T., Wopat, M., Bundros, G., Flanagan, S., Coe, D. and Short, W. 2017. *Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood and Sediment (Updated 2017)*, California Forestry Report No. 1 (revised), State of California Department of Forestry and Fire Protection, Sacramento, California, pp. 23 - 43.

⁶⁹ Furniss, M.J., Flanagan, S. and McFadin, B. 2000. *Hydrologically-connected roads: an indicator of the influence of roads on chronic sedimentation, surface water hydrology, and exposure to toxic chemicals*, Stream Notes, July 2000. Stream Systems Technology Center, U.S. Forest Service, Rock Mountain Research Station, Fort Collins, Colorado.

actions to reduce road-related erosion and sediment delivery to stream channels. The goal of these efforts is to attain the following performance standards for San Mateo County roads identified in the Pescadero-Butano Sediment TMDL implementation plan:

- (1) **For Roads:** Design, construct, and maintain roads to reduce road-related sediment delivery to channels to ≤ 500 cubic yards per mile per 20-year period; or i) limit the length of unpaved roads that are hydrologically connected to 25 percent of total road length; ii) ensure culvert inlets have low plugging potential; and, iii) install appropriate best management practices, such as critical dips,⁷⁰ at culverted crossings that have a diversion potential; and
- (2) **For Gullies and/or shallow landslides:** Promote natural recovery and minimize human-caused increases in sediment delivery from unstable areas. Manage existing roads and other infrastructure to prevent additional erosion of legacy sediment delivery sites and/or delivery from potentially unstable areas.

ii. **Implementation Level** – To comply with this provision element, San Mateo County shall:

- (1) Develop a prioritized list of control measures and pollution prevention strategies for all road-related erosion sites and for all culvert crossings to achieve the performance standards described in C.18.b.i(1). The list shall include a brief description of the control measure(s) to be taken and a projected completion date for each control measure. For paved roads, erosion and sediment control actions could primarily focus on road crossings to meet the performance standards.
- (2) Develop a schedule to implement the prioritized list of control measures such that twenty percent (20%)⁷¹ of the control measures for the Pescadero-Butano Creek watershed are scheduled for completion by June 30, 2027. Implementation of control measures for San Gregorio Creek is not required during this Permit term.
- (3) If the length of hydrologically connected unpaved roads identified in C.18.a exceeds 25 percent of the total San Mateo County unpaved road length in a watershed,⁷² then the prioritized list and schedule shall include

⁷⁰ A critical dip is a low berm and/or a dip in the road surface constructed across the roadway, used to divert flow off the road that would otherwise flow down the road surface.

⁷¹ 20 percent means 20 percent of the total estimated cubic yards of potential sediment erosion identified in the road erosion inventory required by Provision C.18.a. .

⁷² 25 percent is measured from road segments located within the watershed. It excludes road segments located outside the watershed.

an implementation plan and schedule of actions to reduce the percentage of hydrologically connected unpaved roads to 25 percent or less. Examples of treatments to reduce overall hydrologic connectivity of roads are provided by Weaver et al. (2015, Chapter 4).

iii. Reporting – The prioritized list and schedule for the Pescadero-Butano watershed shall be completed and submitted to the Water Board in the 2023 Annual Report. The prioritized list and schedule for the San Gregorio Creek watershed shall be completed and submitted to the Water Board in the 2025 Annual Report. San Mateo County shall update the prioritized list and schedule annually thereafter and submit it each year with its Annual Report. The submittal shall include a list of completed, in-progress, and scheduled control measure and pollution prevention strategies and shall include at a minimum the following information for each control measure:

- (1) The project name
- (2) The project location and a brief project description
- (3) Authorizations required to implement the project, including status
- (4) The actual or estimated project start and end dates

C.18.c. Implement Control Measures to Attain Performance Standards

i. Task Description – San Mateo County shall implement control measures and pollution prevention strategies to reduce road-related sediment delivery from County roads to stream channels in the Pescadero-Butano Creek and San Gregorio Creek Watersheds. At least twenty percent (20%) of the control measures identified in Provision C.18.b.ii shall be implemented and completed in the Pescadero-Butano Creek watershed by 2027.

ii. Implementation Level – To comply with this subprovision, San Mateo County shall:

- (1) Continue to follow all the requirements of Provision C.2.e for Rural Road and Public Works Construction and Maintenance.
- (2) Based on the priority list and schedule of actions developed in C.18.b, implement the control measures and pollution prevention strategies for road related erosion sites and culvert crossings to achieve the road performance standards described in C.18.b.i.(1).
- (3) New County-maintained roads constructed on hillslopes exceeding 5 percent shall be constructed as storm-proofed roads, as defined by Weaver et al. (2015, Chapter 6), and shall meet the following specifications where applicable:

- (a) Stream crossings have a drainage structure designed for the 100-year flood flow including woody debris and sediment (Cafferata, et al., (2017)).
- (b) Stream crossings do not have the potential for flow diversion onto the roadway if the culvert is overtopped during a future runoff event.
- (c) Culvert inlets have a low plug potential (trash barriers or deflectors are installed where needed).
- (d) Culverts are installed at the base of the fill and in line with the natural channel.
- (e) Emergency overflow culverts that emerge higher in the fill have full round, anchored downspouts that extend to the natural channel.
- (f) Deep fills (deeper than a backhoe can reach from the roadbed) with undersized culverts or culverts with high plugging potential are fitted with an emergency overflow culvert.
- (g) Bridges have stable, non-eroding abutments and do not significantly restrict 100-year flood flow.
- (h) Stream crossing fills are stable.
- (i) Approaching road surfaces and ditches are hydrologically disconnected from streams and stream crossing culverts to the maximum extent feasible using road shaping and road drainage structures.
- (j) Class I (fish-bearing) stream crossings meet California Department of Fish and Wildlife and National Marine Fisheries Service fish passage criteria.
- (k) Road surfaces and ditches are hydrologically disconnected from streams and stream crossing culverts to the maximum extent feasible. Road surface runoff is dispersed, rather than collected and concentrated.
- (l) Ditches are drained by functional ditch relief culverts and/or rolling dips.
- (m) Outflow from ditch relief culverts does not discharge to streams.
- (n) Ditches and road surfaces drainage does not discharge (through culverts and/or rolling dips) onto active or potential landslides and/or into gullies.
- (o) Fine sediment contributions from roads, cutbanks, and ditches are minimized by utilizing seasonal closures and installing a variety of

surface drainage techniques including road surface shaping (outsloping, insloping, or crowning), rolling dips, ditch relief culverts, water bars, and other measures to disperse road surface runoff and reduce or eliminate sediment delivery to the stream.

New County-maintained roads that are under construction within one year of the start of this Permit term shall be exempt from this requirement (C.18.c.ii.(3)).

iii. Reporting – A report documenting project status shall be submitted with the Annual Report each year starting the first year of project implementation. The report shall include a list of projects from the priority list and schedule of actions in Provision C.18.b that have been completed or are in-progress, including:

- (1) An estimate of the potential sediment delivery to stream channels prevented by the implemented control measure or pollution prevention strategy.
- (2) The percent of control measures in the prioritized list completed to date so that progress in achieving the implementation of 20 percent of the control measures for the Pescadero-Butano Creek watershed by June 30, 2027, is documented.
- (3) A summary of projects scheduled for completion since the last Annual Report submittal that were delayed or not completed and an explanation of why they were delayed or not completed.

C.18.d. Monitoring

i. Task Description – San Mateo County shall conduct implementation, effectiveness, and forensic monitoring to assess the performance of implemented control measures.

ii. Implementation Level – To comply with this provision element, San Mateo County shall:

- (1) Conduct implementation monitoring to assess whether the implemented control measure from C.18.c was fully and properly carried out as specified. Monitoring shall be performed once and conducted via a visual observation of the completed project.
- (2) Conduct effectiveness monitoring to assess whether each of the implemented control measure(s) from C.18.c is adequately protective of water quality. Effectiveness monitoring shall be performed once and conducted via a visual inspection of the construction or repair site and the adjacent area. It shall be performed after the control measure has gone

through one year or one winter season in order to evaluate the effectiveness of the control measure during winter rain events.

- (3) Conduct forensic monitoring in cases where an implemented control measure has failed. Forensic monitoring shall be conducted via a visual inspection of the failed control measure. Site photos shall be taken to adequately document the failure and a brief description of the mechanism and/or circumstances of failure shall be documented.
- (4) Conduct routine monitoring of San Mateo County roads per the guidelines set forth in the County of San Mateo Routine Maintenance Program Manual (San Mateo County 2020, as may be amended).

iii. Reporting – San Mateo County shall document the results of the implementation, effectiveness, and forensic monitoring in a monitoring report submitted with the Annual Report each year starting in the first year of project implementation. If preferred, implementation monitoring information may be included with the implementation reporting required pursuant to Provision C.18.c.iii. The report shall include the following:

- (1) Results of implementation and effectiveness monitoring, including:
 - (a) The monitoring point location and description of the project, or a reference to the specific project in the completed projects report.
 - (b) A brief description of the visual observations made during the monitoring inspection.
 - (c) The date the monitoring inspection was conducted.
- (2) Results of any forensic monitoring conducted in the past year, including:
 - (a) The monitoring point location and description of the project, or a reference to the specific project in the completed projects report.
 - (b) Site photos documenting the failed control measure
 - (c) A brief description of the mechanism and/or circumstances of failure
 - (d) Proposed corrective measures to be taken and timeline for completion
 - (e) The date the monitoring inspection was conducted
- (3) Results of annual monitoring conducted in the past year, including:
 - (a) A summary of all unpaved roads inspected at the end of the rainy season.
 - (b) A brief description of general road conditions and any specific problems noted, particularly with regard to sediment delivery to stream

channels. These observations will be used to make annual updates to the Road Erosion Inventory as required by Provision C.18.a. Any new road-related erosion sites identified during this effort shall be documented in the report and added to the Road Erosion Inventory required by Provision C.18.a.

(c) The date(s) the monitoring inspections were conducted.

C.19. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements

The cities of Antioch, Brentwood, and Oakley, unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District (collectively, East County Permittees), located in the Central Valley Regional Water Quality Control Board's (Central Valley Water Board's) geographic jurisdiction, are included in the definition of "Permittees" as used throughout and shall comply with all requirements of this Order No. R2-2022-0018 except as provided for in this Provision. This Provision also incorporates requirements from Central Valley Water Board's TMDLs and control programs applicable to the East County Permittees.

C.19.a. Mercury Controls

The East County Permittees are exempt from Provision C.11, Mercury Controls.

C.19.b. Polychlorinated Biphenyls (PCBs) Controls

The East County Permittees are exempt from Provision C.12, PCBs Controls.

C.19.c. Diazinon and Chlorpyrifos Controls

- i. Task Description** – The East County Permittees shall continue compliance with the Central Valley Water Board's Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL and continue to meet wasteload allocations for diazinon and chlorpyrifos.
- ii. Implementation Level** – The East County Permittees shall implement Provision C.9.

C.19.d. Methylmercury Control Measure Plan and Monitoring

The methylmercury wasteload allocations for the East County Permittees in the Sacramento-San Joaquin Delta Methylmercury TMDL (Resolution No. R5-2010-0043) by Delta subarea are as follows:

- Central Delta subarea: 0.75 grams/year
- Marsh Creek subarea: 0.30 grams/year
- West Delta subarea: 3.2 grams/year

Methylmercury wasteload allocations shall be met as soon as possible, but no later than the final compliance date of January 1, 2030. As part of the Delta Mercury Control Program Review, the Central Valley Water Board may adopt revised wasteload allocations and a new final compliance date.

- i. Task Description** – Pursuant to the Central Valley Water Board’s Water Quality Control Plan for the Sacramento San Joaquin Basins’ Delta Mercury Control Program and associated Methylmercury TMDL, the East County Permittees were required to develop, conduct, and report on a methylmercury control study for urban runoff. The submitted control study⁷³ proposed conducting a Reasonable Assurance Analysis (RAA) to determine the achievable methylmercury load reduction. The control study also stated that monitoring will be conducted to answer the management questions outlined in Provision C.19.d.ii(2)a-e. Therefore, the East County Permittees shall submit a control measure plan and conduct a corresponding RAA as well as implement methylmercury monitoring as described below. With the Central Valley Water Board’s Executive Officer’s approval, the East County Permittees may participate in the Delta Regional Monitoring Program (Delta RMP) or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this Provision. Participation in the Delta RMP or other collective monitoring efforts shall consist of providing funds and/or in-kind services to the Delta RMP or other collective monitoring effort at least equivalent to the discontinued monitoring efforts in order for the Central Valley Water Board Executive Order to approve the alternative monitoring.
- ii. Implementation Level** – The East County Permittees shall:
- (1) Prepare and submit by November 1, 2022, a Control Measure Plan and schedule to achieve the TMDL wasteload allocations. The Plan shall include a corresponding RAA for total mercury and methylmercury demonstrating that sufficient control measures will be implemented during this Permit term to attain the methylmercury Delta Mercury Control Plan wasteload allocations by January 1, 2030, or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review. The Control Measure Plan, including RAA, shall comply with the following:
 - (a) The Plan shall identify all technically and economically feasible mercury and methylmercury MS4 control measures to be implemented (including green stormwater infrastructure (GSI) projects).
 - (b) The Plan shall include a schedule according to which these technically and economically feasible control measures will be fully implemented.
 - (c) The Plan shall provide an evaluation and quantification of mercury and methylmercury load reductions of such measures as well as an

⁷³ *Contra Costa Clean Water Program Methylmercury Control Study Final Report (Rev. 1)*, September 2020.

evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.

- (d) The RAA for total mercury must be evaluated using the California Toxics Rule for mercury (0.05 µg/L).
 - (e) The RAA for methylmercury must be evaluated using the methylmercury load allocations specific to each Delta subarea within Contra Costa County subject to the DMCP (i.e., the Central Delta, Marsh Creek, and West Delta subareas).
 - (f) The RAA shall demonstrate quantitatively that the plan will result in mercury and methylmercury load reductions sufficient to attain the methylmercury wasteload allocations by January 1, 2030, (or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review) and address the following questions:
 - (i) What are the annual mercury and methylmercury loads from the MS4 discharge to the Central Delta, Marsh Creek, and West Delta subareas?
 - (ii) Do the mercury and methylmercury loads to each subarea meet the assigned methylmercury wasteload allocations?
 - (iii) What is the achievable mercury and methylmercury load reduction in discharges from the MS4 by implementation of reasonable, foreseeable control measures?
 - (iv) What controllable MS4 water quality factors affect methylmercury production and transport in the MS4 discharge and in the receiving waters draining to the Delta?
 - (v) Are there MS4 design features that increase or decrease mercury methylation.
 - (vi) Are there reasonable and foreseeable management actions to reduce methylmercury concentrations within the MS4 boundary?
 - (g) Permittees shall ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill Provision C.19.ii.(1)(a)-(f) have been validated through a peer review process. The East County Permittees may use the approach developed by the Contra Costa Clean Water Program or an equivalent approach developed by another program during the previous permit term.
- (2) Conduct annual monitoring in waterways within the East County Permittees' MS4 boundary to answer the questions in Provision

C.19.d.ii(2)(a)-(e). Monitoring shall include, but is not limited to, Marsh Creek, downstream of Marsh Creek Reservoir, and Central and West Delta Subarea tributaries within the MS4 boundary. Permittees shall collect fifty (50) samples throughout the Permit term, with at least eight (8) samples annually, for aqueous methylmercury analysis. Samples shall be collected in each subarea to be representative of the discharge during wet and dry year conditions and analyzed using U.S. EPA- or SWAMP- approved methods.

- (a) What are the annual methylmercury loads from the MS4 discharge to the Central Delta, Marsh Creek, and West Delta subareas?
 - (b) Do the methylmercury loads to each subarea meet the assigned methylmercury wasteload allocations?
 - (c) Are there any MS4 design features that increase mercury methylation in the discharge?
 - (d) What MS4 water quality controls have been implemented or are planned to be implemented to reduce methylmercury production and transport in the MS4 discharge?
 - (e) By January 1, 2024, address whether eutrophication and low dissolved oxygen concentrations increase methylmercury in ponded areas of Marsh Creek during low flow periods (depending on the year, low flow periods can range between mid-March and mid-November), and, if so:
 - (i) Under what hydrologic or seasonal circumstances do increased methylmercury concentrations reach the Delta?
 - (ii) Are there reasonable and foreseeable management actions to ameliorate increased methylmercury concentrations?
- (3) Prepare an Annual Mercury Monitoring Plan and submit it to the Central Valley Water Board for Executive Officer approval. The monitoring plan shall describe the annual monitoring design and specify the proposed sampling locations for methylmercury sampling required under Provision C.19.d.ii.(2).

iii. Reporting

- (1) Annual Mercury Monitoring Plan – by October 1, 2022, and annually thereafter with the Urban Creeks Monitoring Report due March 31.
- (2) Annual Report – The East County Permittees shall provide the following:
 - (a) Monitoring and assessment results answering the questions required under Provision C.19.d.ii.(2), and

- (b) Upon completion by the deadline in Provision C.19.d.ii.(1), submit the Control Measure Plan, including RAA.

A copy of each Annual Report shall also be submitted to the Central Valley Water Board.

- (3) Pollutants of Concern Monitoring Report – The East County Permittees shall report monitoring and assessment activities relevant to the Delta Methylmercury TMDL from the past water year and planned for the next water year as a separate section within the Pollutants of Concern Monitoring Report required under Provision C.8.h.iv. A copy of each Pollutants of Concern Monitoring Report shall also be submitted to the Central Valley Water Board.
- (4) Integrated Monitoring Report – The East County Permittees shall report the monitoring and assessment results as a separate section within the Integrated Monitoring Report as required under Provision C.8.h.v. A copy of each Integrated Monitoring Report shall also be submitted to the Central Valley Water Board.
- (5) The East County Permittees shall report progress on the Delta Methylmercury TMDL and recommendations for the next permit re-issuance as a separate section within the Report of Waste Discharge (ROWD) required by Provision C.25. A copy of the ROWD shall also be submitted to the Central Valley Water Board.

C.19.e. Delta Mercury Control Program Minimum BMPs

- i. **Task Description** – The East County Permittees shall implement inorganic mercury reduction BMPs as well as provide ongoing education and outreach to address mercury pollution prevention and risk reduction.
- ii. **Implementation Level** – At a minimum, the East County Permittees shall implement the following inorganic mercury reduction BMPs, consistent with the Delta Methylmercury TMDL.
 - (1) **Mercury Collection and Recycling** - To minimize mercury in storm water the East County Permittees shall continue implementing:
 - (a) Collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs); and
 - (b) Collection, recycling and/or diversion of mercury-containing waste products (e.g., gauges, batteries, fluorescent and other lamps, switches, relays and sensors) from the waste stream from industrial and commercial entities (e.g., auto dismantlers), and municipal facilities.

- (2) **Enhanced Municipal Management Practices to Reduce Sediment Discharges** - The East County Permittees shall continue to implement BMPs to minimize sediment discharges during municipal operations and municipal maintenance activities. Municipal operations and municipal maintenance activities include but are not limited to the following: storm drain drop inlet and pipeline cleaning, landscaping, road construction, road repair, and pump station cleaning.
- (3) **Public Education and Risk Reduction** - The East County Permittees shall continue to conduct ongoing education to the public on mercury pollution prevention and mercury risk reduction. The East County Permittees shall continue to:
 - (a) Provide mercury pollution prevention messages to residents, commercial businesses, and industrial facilities with mercury-containing products or emissions. This may be implemented as part of Provision C.7; and
 - (b) Provide notices to communities on the health risk associated with eating mercury contaminated fish. These notices shall also include the Office of Environmental Health Hazard Assessment's fish consumption advisories.
- (4) **Methylmercury Controls** – the East County Permittees shall implement control measures that reduce mercury methylation potential and retrofit existing BMPs that show an increase of mercury methylation.
 - (a) New development projects shall use BMPs that either prevent an increase of methylmercury or have been shown to decrease methylmercury.
 - (b) For existing BMPs that increase methylmercury within subareas that are meeting the assigned wasteload allocation, retrofitting of these BMPs may occur as part of any capital improvement, redevelopment, operation, or maintenance plan as resources are available.
 - (c) For existing BMPs that increase methylmercury within subareas that are not meeting the assigned wasteload allocation, retrofitting of these BMPs shall occur as soon as feasibly possible, but no later than the final compliance date of January 1, 2030 (or any revised final compliance date adopted by the Central Valley Water Board as part of the Delta Mercury Control Program Review).

iii. **Reporting** – In each Annual Report, the East County Permittees shall:

- (1) Describe Mercury Collection and Recycling efforts.

- (2) List the municipal operations and municipal maintenance activity BMPs that are implemented to minimize sediment discharges.
- (3) Discuss the mercury pollution prevention messages provided and
- (4) Summarize tasks implemented to provide notices on the health risk associated with eating mercury contaminated fish.
- (5) Report on implementation of methylmercury controls required in C.19.2.ii.(4).

C.19.f. Pyrethroid Control Program

- i. Task Description** – The East County Permittees shall comply with the Central Valley Water Board’s conditional prohibition of the discharges of pyrethroid pesticides and associated monitoring and reporting requirements established in the Amendment to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the control of Pyrethroid Pesticide Discharges (Resolution No. R5-2017-0057).
- ii. Implementation Level** – The East County Permittees shall:
 - (1) Continue to implement a pesticide control program as required by Provision C.9, which is consistent with Central Valley Water Board requirements for a pyrethroid management plan.
 - (2) Continue pesticides and toxicity monitoring as specified in Provision C.8.g. In addition to the pollutants and organisms listed in Table 8-5, the East County Permittees shall also analyze total and particulate organic carbon, as required by the Central Valley Water Board’s Basin Plan Amendment (R5-2017-0057).
 - (3) Submit a baseline monitoring report by September 19, 2022, that:
 - (a) Summarizes the pyrethroid and toxicity monitoring results from 2012 through 2019;
 - (b) Assesses the compliance of the discharge with the conditional prohibition triggers in the Basin Plan established by Resolution No. R5-2017-0057;
 - (c) Summarizes toxicity of water and sediment samples to the test organism *Hyalella azteca*; and
 - (d) Summarizes any other pyrethroid monitoring data collected by the East County Permittees during the above period.

iii. Reporting – The East County Permittees shall:

- (1) With the 2024 and subsequent Annual Reports, provide a progress report to document the management practices that have been implemented, evaluate pyrethroid concentrations with respect to the pyrethroid triggers, and identify effective control actions to be taken in the future. A copy shall be provided to the Central Valley Water Board.
- (2) Urban Creeks Monitoring Report (UCMR) – The East County Permittees shall report monitoring, assessment results, relevant to the Pyrethroids Control Program as a separate Pyrethroid Trend Monitoring section within the 2024 UCMR required under Provision C.8.h.iii. A copy of the 2024 UCMR shall also be submitted to the Central Valley Water Board. The Pyrethroid Trend Monitoring section of the 2024 UCMR, shall include an analysis of data collected in East County Permittees receiving waters for pesticides and toxicity from 2019 through 2024 to assess the following:
 - (a) Whether discharges from MS4s are exceeding the acute and chronic pyrethroid triggers set forth in the Amendment to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges (Resolution No. R5-2017-0057);
 - (b) Whether pyrethroid pesticides are causing or contributing to exceedances of the narrative water quality objective for toxicity in surface waters or bed sediments.
 - (c) The effectiveness of management practices that are implemented to reduce pyrethroid levels in discharges;
 - (d) Whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives.

C.20. Cost Reporting

C.20.a. Task Description – Each Permittee shall annually prepare and submit a fiscal analysis of the capital and operation and maintenance costs incurred to comply with this Order’s requirements listed in Provision C.20.b.(iii).

C.20.b. Implementation Level

- i. The Permittees shall develop a cost reporting framework and methodology to perform the fiscal analysis. Permittees are encouraged to collaboratively develop the framework and methodology for purposes of efficiency, cost-savings, and regionwide consistency and comparability. The framework shall consider identification of costs incurred solely to comply with this Order’s requirements as listed in Provision C.20.b.(iii) as compared to costs shared with other programs or regulatory requirements, provide meaningful data to assess costs of different program areas, and allow for comparisons and to identify trends over time.
- ii. The analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds, and identify any funding resources shared on a regional or countywide basis. The analysis shall include the costs incurred to comply with this Permit, and an estimate of costs for the upcoming Permit year.
- iii. The analysis shall include the following program areas, specifically as required under this Order:
 - (1) Program management
 - (2) Municipal operations
 - (3) New development and redevelopment
 - (4) Industrial and commercial site controls
 - (5) Illicit discharge detection and elimination
 - (6) Construction site controls
 - (7) Public information and outreach
 - (8) Water quality monitoring
 - (9) Pesticides toxicity control
 - (10) Trash load reduction
 - (11) Mercury controls
 - (12) PCBs controls

(13)Copper controls

(14)Bacteria controls

(15)Discharges associated with unsheltered homeless populations

(16)Asset management plan development and implementation

iv. The costs reported for each program area shall address the following categories:

(1) Total cost

(2) Capital expenditures

(3) Land costs

(4) Personnel costs

(5) Consultant costs

(6) Overhead costs

(7) Construction costs

(8) Operation and maintenance costs

(9) Other costs

C.20.c. Reporting

- i. The Permittees shall submit the cost reporting framework and methodology, acceptable to the Regional Water Board Executive Officer, by June 30, 2023.
- ii. The Permittees shall submit their fiscal analyses annually according to the accepted cost reporting framework and methodology starting with the 2025 Annual Report.

C.21. Asset Management

C.21.a. Task Description – Each Permittee shall develop and implement an Asset Management Plan in order to ensure the satisfactory condition of all hard assets⁷⁴ constructed during this and Previous Permit terms pursuant to Provisions C.2 Municipal Operations, C.3 New Development and Redevelopment, C.10 Trash Load Reduction, C.11 Mercury Controls, C.12 PCBs Controls, C.13 Copper Controls, C.14 Bacteria Controls for Impaired Water Bodies, C.17 Discharges Associated with Unsheltered Homeless Populations, C.18 San Mateo County Sediment Controls, and C.19 Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Requirements.

C.21.b. Implementation Level – Each Permittee shall:

- i. Develop an Asset Management Plan by June 30, 2025, which, at a minimum, shall include the following:
 - (1) A description of the asset categories to be included.
 - (2) An inventory (or link to such an inventory) of Permittees' existing hard assets built pursuant to the Provisions cited in Provision C.21.a, including at a minimum all LID/GSI systems and trash capture devices.
 - (3) An Operation, Maintenance, Rehabilitation, and Replacement Plan (Asset Management O&M Plan), to evaluate data obtained through asset assessment in order to inform a strategy for prioritizing and scheduling maintenance, rehabilitation, and replacement of inventoried assets, including:
 - (a) A process for prioritizing and scheduling operation and maintenance activities.
 - (b) A process(es) for evaluating the current condition, and identifying the need for and carrying out, as appropriate, the rehabilitation and replacement of inventoried assets. The process(es) shall account for:
 - (i) The minimum condition necessary to achieve minimum performance level(s) for each type of hard asset, including an assessment of stormwater volume and pollutant load reduction, necessary to comply with applicable Permit Provisions and TMDLs.

⁷⁴ Hard assets are structural controls that serve a water quality function, for example: bioretention cells, pervious pavement systems, full trash capture devices, trash receptacles, and pet waste stations.

- (ii) Current performance level and effectiveness, as indicated by condition. Permittees may implement a risk-based condition assessment, or comparable assessment method, to cost-effectively and -efficiently assess condition. Permittees shall base the effectiveness evaluation on, at a minimum, factors such as design, capacity, and condition and function relative to the asset's design, intended operating conditions, and intended function.
 - (iii) Consequence of failure and likelihood of failure.
 - (c) An evaluation or forecast of costs necessary for the implementation of (a)-(b) above, at least through the end of the current permit term. On an ongoing basis, the Permittees shall compare these projections with available funding sources to determine the best manner in which to fund the operation, maintenance, rehabilitation, and replacement of inventoried assets. This evaluation or forecasting may supplement Permittees' compliance with Provision C.20 Cost Reporting.
- (4) Recommendations for a reporting strategy, which may have a nexus with the tracking systems referenced in Permittees' Green Infrastructure Plans, to include:
- (a) Municipality-specific reporting;
 - (b) Assessment of the programmatic benefit from countywide or regional roll-up of collected information.
- ii. Begin implementation of the Asset Management Plan no later than July 1, 2025.
 - iii. Reassess and update their Asset Management Plan on an as-needed basis, to address changing conditions and resources.
 - iv. Provide the latest version of the Asset Management Plan to Water Board staff during inspections and audits, or otherwise upon request.
 - v. Complete a Climate Change Adaptation Report to identify potential climate change-related threats to assets and appropriate adaptation strategies. The report shall assess existing, new, and increasing threats from climate change to the condition of Permittees' inventoried hard assets over the next 50 years, and identify approaches that Permittees may implement to address those threats, such as the modification of design standards and countywide technical guidance documents. The Climate Change Adaptation Report may be developed on an all-Permittee (regional) scale or countywide scale.

C.21.c. Reporting

- i.** The Permittees shall submit their Asset Management Plans with the 2025 Annual Reports.
- ii.** The Permittees shall report on the implementation of their Asset Management Plans annually, starting with the 2026 Annual Reports, as follows:
 - (1)** Provide (or link to) an inventory of all assets accounted for in the Asset Management Plan.
 - (a)** Different categories of assets (e.g., trash controls, LID/GSI controls, bacteria controls) may be maintained in separate inventories.
 - (2)** At a minimum, for each asset in the inventory, provide the following: category or type of water quality control; relevant design information; tributary drainage area; location; condition based on periodic inspections either by municipal or contracted staff; and operation and maintenance need (for example, while most assets may require normal operation & maintenance, Permittees may identify a subset of assets in need of rehabilitation or replacement).

This information does not have to be submitted in tabular format in the Annual Report; it may be provided externally, at the linked location identified in Provision C.21.c.ii.(1) above.
- iii.** The Permittees shall submit the Climate Change Adaptation Report described in Provision C.21.b.v with their 2026 Annual Reports. The Permittees may submit the Climate Change Adaptation Report(s) on an all-Permittee (regional) scale or countywide scale.

C.22. Annual Reports

- C.22.a.** The Permittees shall submit Annual Reports electronically, including a verified electronic signature (e.g., Adobe e-signature, DocuSign, or equivalent), in all cases by September 30 of each year, in the manner specified by the Water Board. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.21, with the exception of the 2022 annual reporting requirements for Provisions C.2 – C.9, which are set forth in Provisions C.2 - C.9 of the previous Permit, Order No. R2-2015-0049, as amended. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.
- C.22.b.** The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by March 1, 2023. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by March 1 of each year for the following Annual Report, to more accurately reflect the reporting requirements of Provisions C.1 – C.21, with the agreement of the Permittees and by the approval of the Executive Officer.
- C.22.c.** The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit, in the cover letter of the Annual Report, the reason for its failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.23. Modifications to this Order

The Water Board may modify or reopen this Order, or alternatively, revoke or reissue it, before the expiration date in any of the following circumstances or as authorized by law:

- C.23.a.** To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;
- C.23.b.** To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plans for the San Francisco Bay and the Sacramento and San Joaquin River Basins approved by the State Water Board;
- C.23.c.** To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) or other applicable provision of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order;
- C.23.d.** To provide an alternative compliance program for exchanges of impervious surface treatment credits in Provision C.3.e.i; or
- C.23.e.** To incorporate applicable requirements from the Central Valley Regional Water Board's Phase 1 Delta Mercury Control Program Review under the Basin Plan for the Sacramento and San Joaquin River Basin.

C.24. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

C.25. Expiration Date

This Order expires on June 30, 2027, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

C.26. Rescission of Old Order

Order No. R2-2015-0049, as amended by Order No. R2-2019-0004, is hereby rescinded, except for enforcement purposes, on the effective date of this Order, which shall be July 1, 2022, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

C.27. Effective Date

The Effective Date of this Order and Permit shall be July 1, 2022, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

I, Thomas Mumley, Interim Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 11, 2022.

Thomas Mumley
Interim Executive Officer

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BAMSC	Bay Area Municipal Stormwater Collaborative
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFW	California Department of Fish and Wildlife
CEDEN	California Environmental Data Exchange Network
Central Valley Water Board	California Regional Water Quality Control Board, Central Valley Region
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CSCI	California Stream Condition Index
CWA	Federal Clean Water Act
CWC or Water Code	California Water Code
DCIA	Directly Connected Impervious Area
DDCP	Direct Discharge Control Plan
DPR	California Department of Pesticide Regulation

East County Permittees or East Contra Costa Permittees	The cities of Antioch, Brentwood, and Oakley, and portions of Unincorporated Contra Costa County and the Contra Costa County Flood Control and Water Conservation District that are in the Central Valley Water Board's region
ERP	Enforcement Response Plan
FR	Federal Register
FSURMP	Fairfield-Suisun Urban Runoff Management Program
GI or GSI	Green Stormwater Infrastructure
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
ISWEBE	Inland Surface Waters, Enclosed Bays, and Estuaries Plan
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable
MRP	Municipal Stormwater Regional Permit (see Glossary for MRP 1, MRP 2, MRP 3)
MSDS	Material Safety Data Sheet
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
NAFSMA	National Association of Flood & Stormwater Management Agencies
NAICS	North American Industry Classification System
NGO	Non-governmental Organization
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System

NRDC	Natural Resources Defense Council
Ocean Plan	California Water Quality Control Plan for Ocean Waters of California
OFEE	Oil Filled Electrical Equipment
O&M	Operation and Maintenance
PAHs	Polynuclear Aromatic Hydrocarbons
PBDE	Polybrominated Diphenyl Ether
PCA	Pest Control Advisor
PCBs	Polychlorinated Biphenyls
PHAB	Physical Habitat (e.g., of streams)
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RAA	Reasonable Assurance Analysis
RCRA	Federal Resource Conservation and Recovery Act
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program
ROW	Right of Way
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Federal Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SIC	Standard Industrial Classification
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SSA	Solano Stormwater Alliance
SSID	Stressor Source Identification

SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
State Water Board	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Federal Toxic Substances Control Act
TST	Test of Significant Toxicity
TU	Toxicity Units
UCMR	Urban Creeks Monitoring Report
U.S. EPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations
WQBEL	Water Quality Based Effluent Limitation
WQS	Water Quality Standards

GLOSSARY

Actual Discharge	Observed or documented flow of unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4.
Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the State protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Base Course	A layer of constructed material (typically aggregate base – a construction aggregate typically composed of crushed rock or of recycled asphalt or concrete, capable of passing through a sieve with a certain pore diameter) located above the subbase course and/or subgrade course, and below the surface layer (which consists of a wearing course, and sometimes an extra binder course), applied to serve one or more functions, such as supporting the surface layer and distributing load.
Bituminous Surface Treatment	<p>A thin protective wearing surface, which can provide, among other services, a waterproof layer to protect underlying pavement and a filler for existing cracks or raveled surfaces. This includes, but is not limited to:</p> <ul style="list-style-type: none"> • Chip seal – a single layer of asphalt emulsion binder that is covered by embedded aggregate; • Slurry seal – a thick, cold mix paving treatment that contains aggregates, asphalt emulsion, binder and fines, water, and additives; and • Seal coat – an emulsion containing liquid asphalt and/or coal tar, mineral fillers and other anti-oxidation additives and admixtures. • Cape seal – a chip seal covered with a slurry or micro-surface, applied to existing pavements. Micro-surfacing is a polymer-modified cold-mix paving system that begins as a mixture of dense-graded aggregate, asphalt emulsion, water and mineral fillers.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.

Construction Site	Any project, including projects requiring coverage under the Construction General Permit, that involves soil-disturbing activities including, but not limited to, grubbing, clearing, grading, paving, disturbances to ground such as stockpiling, leveling, fill, and excavation. Construction sites include all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit. Construction sites are considered active until site surfaces are permanently stabilized to control erosion and other polluted stormwater discharges effectively.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this Permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of WQS because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff, or a non-stormwater discharge.
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size.
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.
Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Floor Area Ratio	The ratio of the total floor area on all floors of all buildings at a project site (except structures or floors dedicated to parking) to the total project site area.

Full Trash Capture Device	A Full Capture Device or System is a treatment control, or series of treatment controls, including, but not limited to, a multi-benefit project (as defined in the Trash Amendments) or a low-impact development control that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain.
General Permits	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; `Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
Grading	The cutting and/or filling of the land surface to a slope or elevation.
Green Infrastructure	Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.
Gross Density	The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.
Hydrologic source control measures	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
Hydromodification	The modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.
Illicit Discharge	Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, State, or federal statutes, ordinances, codes, or regulations. The term <i>illicit discharge</i> includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Executive Officer.

<p>Impervious Surface</p>	<p>A surface covering or pavement of a developed parcel of land that prevents the land’s natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.</p>
<p>Industrial Development</p>	<p>Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.</p>
<p>Infill Site</p>	<p>A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.</p>
<p>Infiltration Device</p>	<p>Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes french drains).</p>
<p>Integrated Pest Management⁷⁵</p>	<p>An ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines (and when it has been concluded that the use of non-chemical controls is insufficient), and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment (DPR, 2018).</p>

⁷⁵ Roadmap for Integrated Pest Management, CDPR 2018, https://www.cdpr.ca.gov/docs/pestmgt/ipm_roadmap.pdf

Integrated Pest Management, Biological Controls	Biological controls are the beneficial action of predators, parasites, pathogens, and competitors to control pests and pest damage. These controls rely on predation, parasitism, herbivory, or other natural mechanisms, but typically require active human intervention, such as releasing ladybugs.
Integrated Pest Management, Least Hazardous Chemical Controls	Chemical controls involve targeted application of traditional chemical pesticides, as well as alternative products, such as oils and soaps.
Integrated Pest Management, Cultural Controls	Cultural controls reduce pest establishment, reproduction, dispersal, and survival. Examples include scheduling planting, irrigation, and fertilization; soil solarization; and planting native vegetation and xeriscape to reduce water, pesticide, and fertilizer needs. Changing irrigation practices can reduce pest problems, since too much water can increase root disease and weeds.
Integrated Pest Management, Mechanical and Physical Controls	Mechanical and physical controls kill pests directly, exclude pests, or make the environment unsuitable for pests. Physical controls may involve manual removal of pests or mowing. Barriers (screens, mesh, caulk and other sealants) are physical controls that keep pests out of buildings and structures, and may be used to enclose sensitive plants. Mulch is a physical control that inhibits weed growth. Rodent traps are mechanical controls.
Integrated Pest Management, Pest Action Threshold	The point at which pest populations or environmental conditions indicate that one or more pest control actions must be taken. Sighting a single pest does not always mean control is needed. The level at which pests will either become an economic or health threat is critical to guide appropriate, least toxic pest control decisions.
Joint Stormwater Treatment Facility	A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.
Local Roads	Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.
Maximum Extent Practicable (MEP)	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. CWA 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants.” Also see State Water Board Order WQ 2000-11.

Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
MRP 1	Order No. R2-2009-0074, as amended by Order No. R2-2011-0083.
MRP 2 or Previous Permit	Order No. R2-2015-0049, as amended by Order No. R2-2019-0004.
MRP 3, Permit, or Order	Order No. R2-2022-0018.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law...including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in 40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; and/or (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA sections 307, 402, 318, and 405.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, or other date as specified, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.

Pervious Pavement	A pavement system consisting of permeable interlocking concrete pavement (PICP), pervious or permeable concrete unit pavers, pervious grid pavements, pervious concrete, porous asphalt, turf block, grasscrete, and bricks and stones, set on a gravel base with gravel joints, which stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and PAHs; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Potential Discharge	Conditions with the potential to result in unauthorized, illicit, or pollutant-containing stormwater discharges to the MS4. These include, but are not limited to, housekeeping issues, inadequate waste or materials management, evidence of actual discharges that are not ongoing, lack of emergency response plans, lack of BMPs, inadequate BMPs, and inappropriate BMPs.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.

Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by the San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).
Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMPs	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain WQS. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet WQS even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.

Toxicity Identification Evaluation (TIE)	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.
Trash and Litter	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.
Treatment	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
Waste Load Allocations (WLAs)	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
Water Quality Control Plan (Basin Plan)	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required.
Water Quality Objectives	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
Water Quality Standards	State-adopted and U.S. EPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the WQS that must be met to protect designated uses. Water quality standards also include the federal and State anti-degradation policy.
Water Year	The Water Year spans twelve months and begins on October 1 of each year. It is designated by the calendar year in which it ends. For example, the 2023 Water Year starts on October 1, 2022, and ends on September 30, 2023.

Wedge Grinding	The process of milling the asphalt areas directly adjacent to concrete curbs, gutter pans and metal structures (e.g., manhole covers) to a specified width and depth. To tie into the elevations of the existing concrete and metal structures, asphalt is removed along the perimeter to allow proper depth of asphalt on the edge and to preserve the appropriate drainage patterns on the asphalt surface.
Wet Season	October 1 of a given year through April 30 of the following year.

EXHIBIT 3
to Section 7

California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit

Order No. R2-2015-0049
NPDES Permit No. CAS612008
November 19, 2015

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**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

ORDER No. R2-2015-0049

NPDES PERMIT No. CAS612008

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program (Fairfield-Suisun Permittees)

The City of Vallejo and the Vallejo Sanitation and Flood Control District (Vallejo Permittees)

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The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Attachment A) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. The Fact Sheet, including any supplements thereto, is hereby incorporated by reference.

Existing Permit

2. **Alameda County**—The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
3. **Contra Costa County**—The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated June 2, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
4. **San Mateo County**—The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County have joined together to form the San Mateo Countywide Water

Pollution Prevention Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County**—The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 29, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
6. **Fairfield-Suisun**—The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated June 2, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
7. **Vallejo**—The City of Vallejo and the Vallejo Sanitary District (hereinafter referred to as the Vallejo Permittees) have submitted permit applications (Report of Waste Discharge), dated July 3 and June 2, 2014, respectively, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions. The Vallejo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083, to discharge stormwater runoff from storm drains and watercourses within the their jurisdictions.
8. The Alameda, Contra Costa, San Mateo, Santa Clara, Fairfield-Suisun, and Vallejo Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including

construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, USEPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, USEPA published an Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.

10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law, and USEPA, where required.
11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, and selenium in San Francisco Bay segments; pesticide associated toxicity, and trash in urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.
12. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

13. Stormwater runoff is generated from various land uses in all the hydrologic sub-basins in the Basin and discharges into watercourses, which in turn flow into Central, Lower and South San Francisco Bay, and Suisun and San Pablo Bays.
14. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not

limited to, support for aquatic life; and other pollutants that can cause aquatic toxicity in the receiving waters.

15. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to USEPA stormwater regulations.
16. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.
17. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.
18. The Water Board notified the Permittees and interested agencies and persons of its intent to adopt this Order and provided an opportunity to submit written comments and recommendations.
19. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
20. This Order supersedes and rescinds Order Nos. R2-2009-0074 and R2-2011-0083.
21. This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective January 1, 2016, provided the Regional Administrator, USEPA, Region 9, has no objections.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2009-0074 and R2-2011-0183 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Permittees shall comply with the following requirements in this Order. This action in no way prevents the Water Board from taking enforcement action for past violations of the previous orders.

A. DISCHARGE PROHIBITIONS

- A.1.** The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.
- A.2.** It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.

B. RECEIVING WATER LIMITATIONS

- B.1.** The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
- a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
 - b.** Bottom deposits or aquatic growths;
 - c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.
- B.2.** The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are adopted and approved by the State Water Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Waters Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.16.5. Compliance with Provisions C.9 through C.12, C.14, and C.16.5 of this Order, which prescribe requirements and schedules for Permittees identified therein to manage their discharges that may cause or contribute to violations of water quality standards (WQS) for pesticides, trash, mercury, polychlorinated biphenyls (PCBs), bacteria, diazinon and chlorpyrifos, and methylmercury shall constitute compliance during the term of this Order with Receiving Water Limitations B.1 and B.2 for the pollutants and the receiving waters identified in the provisions. Compliance with Provisions C.10 and C.16.5, which prescribe requirements and schedules for Permittees to manage their discharges of trash, shall also constitute compliance with Discharge Prohibitions A.1 and A.2 during the term of this Order for discharges of trash. If exceedance(s) of WQS, except for exceedances of WQS for pesticides, trash, mercury, PCBs, bacteria, diazinon and chlorpyrifos, and methylmercury that are managed pursuant to Provisions C.9 through C.12, C.14, and C.16.5, persist in receiving waters notwithstanding the implementation of the required controls and actions, the Permittees shall comply with the following procedure:

- a. Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable (WQS), the Permittee(s) shall notify, within no more than 30 days, and thereafter submit a report to the Water Board that describes controls or best management practices (BMPs) that are currently being implemented, and the current level of implementation, and additional controls or BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of water quality standards. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and
- b. Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Water Board to develop additional control measures and BMPs and reinstate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

i. Task Description – Asphalt/Concrete Removal, Cutting, Installation, and Repair

The Permittees shall implement appropriate BMPs at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving, or repair maintenance activities, such as those described in the California Stormwater Quality Association's (CASQA's) Handbook for Municipal Operations.

ii. Implementation Levels

- (1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer system is available for the wastewater generated from these activities provided that appropriate approvals are obtained and pretreatment standards are met.
- (2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from such work sites upon completion of work. The Permittees shall require cleanup of all construction debris, spills, and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association's (BASMAA's) Blueprint for a Clean Bay.

iii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

- #### i. Task Description –
- The Permittees shall implement and require to be implemented BMPs that prevent the discharge of polluted wash water and non-stormwater to storm drains for pavement washing; sidewalk and plaza cleaning; mobile cleaning; pressure washing operations in locations such as parking lots and garages; trash areas; and gas station fueling areas. The Permittees shall implement the BMPs included in BASMAA's Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

-
- ii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

i. Task Description

- (1) The Permittees shall implement appropriate BMPs to prevent polluted stormwater and non-stormwater discharges from bridges and structural maintenance activities directly over water or into storm drains.
- (2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.

ii. Implementation Levels

- (1) The Permittees shall prevent all debris, including structural materials and coating debris, such as paint chips, and other debris and pollutants generated in bridge and structure maintenance or graffiti removal from entering storm drains or water courses.
- (2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks, or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste, or wash water due to graffiti removal from entering storm drains or watercourses.
- (3) The Permittees shall use proper disposal methods for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts the proper capture and disposal methods for the wastes generated.

- iii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.d. Stormwater Pump Stations

- i. **Task Description** – The Permittees shall implement measures to operate, inspect, and maintain stormwater pump stations to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in stormwater discharges to comply with WQs.

- ii. **Implementation Levels** – The Permittees shall comply with the following at Permittee-owned or -operated pump stations:

- (1) Upon becoming aware that the discharge from a pump station has a dissolved oxygen (DO) concentration below 3.0 mg/L, implement corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 milligrams per liter (mg/L) and verify the effectiveness of the corrective actions with monitoring. Corrective actions do not need to be implemented on discharges from pump stations that

remain in the stormwater collection system or infiltrate into a dry creek immediately downstream.

- (2) Ensure that pump stations are free from debris and trash and replace any oil absorbent booms, as needed, and investigate and abate illicit discharges. Pump stations excluded from C.2.d.ii.(1) above are not excluded from this requirement.
- (3) The Permittees shall maintain records of inspection, maintenance, implementation of corrective actions, and any monitoring records at Permittee-owned or -operated pumped stations. These records shall be made available to Water Board staff or its representatives during inspections and audits, or otherwise upon request.

C.2.e. Rural Public Works Construction and Maintenance

i. Task Description – Rural Road and Public Works Construction and Maintenance

For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing, or open space uses. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

ii. Implementation Level

- (1) The Permittees shall continue to implement BMPs for erosion and sediment control measures during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities.
- (2) The Permittees shall implement appropriate BMPs for the following activities. BMPs shall minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities:
 - (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;
 - (b) Identification and prioritization of rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;
 - (c) Construction of roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;

-
- (d) Implementation of an inspection program to maintain rural roads' structural integrity and prevent impacts to water quality;
 - (e) Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion;
 - (f) Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and
 - (g) Replacement of existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner.
- (3) The Permittees shall incorporate existing training and guidance on permitting requirements for rural public works activities so as to stress the importance of proper planning and construction to avoid water quality impacts.
 - (4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for the rural public works construction and maintenance activities in their Annual Report, including reporting on increased maintenance in priority areas.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

- (1) The Permittees shall implement and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle maintenance, heavy equipment, and maintenance vehicle parking areas, and material storage facilities, to comply with water quality standards. Each SWPPP shall incorporate all applicable BMPs that are described in the California Stormwater Quality Association's (CASQA's) Handbook for Municipal Operations and the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda, as appropriate.
- (2) The requirements in this provision shall apply only to facilities that are not covered under the State Water Board's Industrial Stormwater NPDES General Permit.

ii. Implementation Level

- (1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters and street sweeper, vector, and other related equipment wash water. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.

-
- (2) Routinely inspect corporation yards to ensure that non-stormwater discharges are not entering the storm drain system and pollutant discharges are prevented to the maximum extent practicable. At a minimum, each corporation yard shall be fully inspected each year between September 1 and September 30, beginning the 2016-2017 reporting year. Active non-stormwater discharges shall cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded.
 - (3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency.
 - (4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.
 - (5) Outdoor storage areas containing pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. Reporting

- (1) In the 2015-2016 Annual Report, Permittees shall report on implementation of SWPPPs, the results of inspections, and any followup actions in their Annual Report.
- (2) Beginning with the 2016-2017 Annual Report, Permittees shall list activities conducted in the corporation yards that have BMPs in the site-specific SWPPP, date of inspections, the results of inspections, and any followup actions, including the date of any necessary corrective actions implemented, in their Annual Report.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

i. Task Description – At a minimum, each Permittee shall:

- (1) Have adequate legal authority to implement all requirements of Provision C.3;
- (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
- (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
- (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
- (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
- (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;
- (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:
 - Storm drain inlet stenciling.

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- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as Bay-Friendly Landscaping.
 - Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
 - Covered trash, food waste, and compactor enclosures.
 - Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
 - Dumpster drips from covered trash and food compactor enclosures.
 - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.
- (8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).
- ii. **Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1) - (8) in the 2016 Annual Report.

C.3.b. Regulated Projects

- i. **Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii. below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility¹ in accordance with Provisions C.3.c. and C.3.d., unless the Provision C.3.e. alternate compliance options are invoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.
- (1) Any Regulated Project that has been approved with stormwater treatment measures in compliance with Provision C.3.d. under a previous MS4

¹ **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects.

permit is exempt from the requirements of Provision C.3.c. (low impact development requirements).

- (2) Any Regulated Project that was approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that has not begun construction by the effective date of this permit, shall be required to fully comply with the requirements of C.3.c. and C.3.d. Permittees may grant exemptions from this requirement as follows:
 - (a) An exemption may be granted to:
 - (i) Any Regulated Project that was previously approved with a vesting tentative map that confers a vested right to proceed with development in substantial compliance with the ordinance, policies, and standards in effect at the time the vesting tentative map was approved or conditionally approved, as allowed by State law.
 - (ii) Any Regulated Project for which the Permittee has no legal authority to require changes to previously granted approvals, such as projects that have been granted building permits.
 - (b) An exemption from the LID requirements of Provision C.3.c. may be granted to any Regulated Project as long as stormwater treatment with media filters is provided that comply with the hydraulic sizing requirements of Provision C.3.d.
- (3) Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

ii. Regulated Projects are defined in the following categories:

- (1) **Special Land Use Categories**
 - (a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:
 - (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
 - (ii) Retail gasoline outlets;
 - (iii) Restaurants (SIC Code 5812); or
 - (iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is

connected to the sanitary sewer along with the covered portions of the parking structure.

- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:
- (i) Interior remodels; and
 - (ii) Routine maintenance or repair such as:
 - roof or exterior wall surface replacement, and/or
 - pavement resurfacing within the existing footprint.
- (c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This

category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels; and
 - Routine maintenance or repair such as:
 - roof or exterior wall surface replacement, and/or
 - pavement resurfacing within the existing footprint.
- (a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3., only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
- (i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).
- (ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat

stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

- (c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:
 - Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
 - Bicycle lanes built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
 - Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
 - Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.²
 - Caltrans highway projects and associated facilities.

iii. Implementation Level – All elements of Provision C.3.b.i.-ii. shall be fully implemented immediately, including a database or equivalent tabular format that contains all the information listed under Reporting (Provision C.3.b.iv.)

iv. Reporting

(1) C.3.b.i.(2) Reporting

In the 2017 Annual Report, each Permittee shall provide a complete list of the development projects that are subject to the requirements of Provision C.3.b.i.(2). For each such project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). If a Permittee has no projects subject to Provision C.3.b.i.(2), it shall so state in the 2017 Annual Report.

(2) Annual Reporting – C.3.b.ii. Regulated Projects

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the

² Permeable surfaces include pervious concrete, porous asphalt, unit pavers, and granular materials.

fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;
- (e) Total new impervious surface area and/or total replaced impervious surface area;
- (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
- (g) Status of project (e.g., application date, application deemed complete date, project approval date);
- (h) Source control measures;
- (i) Site design measures;
- (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
- (k) Operation and maintenance responsibility mechanism for the life of the project;
- (l) Hydraulic Sizing Criteria used;
- (m) Alternative compliance measures for Regulated Project (if applicable)
 - (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.iv.(2)(a) – (l) for the offsite project; and
 - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.iv.(2)(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and
- (n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing,

detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

Task Description

i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that, at a minimum, shall include the following:

(a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:

- Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
- Dumpster drips from covered trash, food waste, and compactor enclosures;
- Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
- Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
- Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;

(b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;

(c) Properly designed trash storage areas;

(d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;

(e) Efficient irrigation systems; and

(f) Storm drain system stenciling or signage.

(2) **Site Design and Stormwater Treatment Requirements**

(a) Require each Regulated Project to implement at least the following design strategies onsite:

- (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes

and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;

- (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
 - (iii) Minimize impervious surfaces;
 - (iv) Minimize disturbances to natural drainages; and
 - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with pervious pavement systems.³
 - Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.
- (b) Permittees shall collectively, on a regional or countywide basis, develop and adopt design specifications for pervious pavement systems, subject to the Executive Officer's approval. If countywide design specifications have been adopted and are contained in countywide stormwater handbooks, Permittees may reference these documents in the Annual Reports.
- (c) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
- (i) LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment.
 - (ii) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention

³ Pervious pavement systems include pervious asphalt, pervious concrete, pervious pavers, and grid pavers.

and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L of the previous permit (Order No. R2-2009-0074), dated November 28, 2011. Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.

- (iii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:
 - (i) The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
 - (ii) The green roof system planting media shall be sufficiently deep to support the long-term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.
- (d) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(c) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Reporting

- (1) Permittees shall collectively submit in the 2016 Annual Report, design specifications for pervious pavement systems that have been developed and adopted on a regional or countywide basis. If Permittees within a countywide program are using countywide design specifications that have been adopted and are contained in a countywide stormwater handbook, those Permittees may reference the countywide stormwater handbook in lieu of submitting the actual design specifications.
- (2) For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.iv, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

- i. **Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:
 - (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:
 - (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
 - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of CASQA’s Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
 - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
 - (a) 10 percent of the 50-year peak flow rate;
 - (b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
 - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
 - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- ii. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.iv.(2)
- iii. **Limitations on Use of Infiltration Devices in Stormwater Treatment Systems**
 - (1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil.

Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

- (2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
 - (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
 - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
 - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
 - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;
 - (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
 - (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the

level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.

i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) **Option 1: LID Treatment at an Offsite Location**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) **Option 2: Payment of In-Lieu Fees**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees⁴ to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.⁵ The Regional Project must achieve a net environmental benefit.

(3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of a Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

ii. **Special Projects**

(1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and automobile-related pollutant impacts.

⁴ **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

⁵ **Regional Project** – A regional or municipal stormwater treatment facility that discharges into the same watershed as the Regulated Project.

Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

- (2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:
 - (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite;
 - (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and
 - (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

- (3) Category A Special Project Criteria
 - (a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:
 - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

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- (iii) Create and/or replace one half acre or less of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.
 - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
- (b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (4) Category B Special Project Criteria
- (a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:
 - (i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.
 - (ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.
 - (iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.
 - (iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.
 - (b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is

expressed in Floor Area Ratios (FARs⁶) for commercial development projects, in Dwelling Units per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.

(i) 50% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density⁷ of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(ii) 75% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(iii) 100% Maximum LID Treatment Reduction Credit

⁶ **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

⁷ **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.

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- For any commercial Category B Special Project with an FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
 - For any mixed use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- (5) Category C Special Project Criteria (Transit-Oriented Development)
- (a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:
- (i) Be characterized as a non-auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.
 - (ii) If a commercial development project, achieve at least an FAR of 2:1.
 - (iii) If a residential development project, achieve at least a gross density of 25 DU/Ac.
 - (iv) If a mixed use development project, achieve at least an FAR of 2:1 or a gross density of 25 DU/Ac.
- (b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.

(c) Location Credits

- (i) A Category C Special Project may qualify for the following Location Credits:
 - a. 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.
 - b. 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.
 - c. 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.
- (ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.
- (iii) At least 50% or more of a Category C Special Project's site must be located within the ¼ or ½ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.
- (iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.

(d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.

- (i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:
 - a. 10% Density Credit: Achieve an FAR of at least 2:1.
 - b. 20% Density Credit: Achieve an FAR of at least 4:1.
 - c. 30% Density Credit: Achieve an FAR of at least 6:1.
- (ii) A Category C Special Project that is a residential or mixed-use development project may qualify for the following Density Credits:

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- a. 10% Density Credit: Achieve a gross density of at least 30 DU/Ac.
 - b. 20% Density Credit: Achieve a gross density of at least 60 DU/Ac.
 - c. 30% Density Credit: Achieve a gross density of at least 100 DU/Ac.
- (iii) Commercial Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR. Mixed use Category C Projects may use Density Credits based on either DU/Ac or FAR, but not both.
 - (iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.
- (e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.
 - (i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:
 - a. 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.
 - b. 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.
 - (ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.
- (6) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.).

iii. Implementation Level

- (1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.

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- (2) The definitions of FAR and gross density applicable to Provisions C.3.e.ii.(4) and (5) are effective July 1, 2016, and shall apply to all Special Projects granted final discretionary approval on or after July 1, 2016.
 - (3) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

iv. Reporting – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

v. Reporting on Special Projects

- (1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications but that have not received final discretionary approval.
- (2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

- (a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.
- (b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.
- (c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

- (3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the

Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:

- (a) **Submittal Date:** Date that a planning application for the Special Project was submitted.
- (b) **Description:** Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.
- (c) **Site Acreage:** Total site area in acres.
- (d) **Gross Density in DU/Ac:** Number of dwelling units per acre.
- (e) **Density in FAR:** Floor Area Ratio.
- (f) **Special Project Category:** For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
- (g) **LID Treatment Reduction Credit:** For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.
- (h) **Stormwater Treatment Systems:** List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.
- (i) **List of Non-LID Stormwater Treatment Systems:** List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.f. Alternative Certification of Stormwater Treatment Systems

- i. Task Description** – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California or staff of another Permittee subject to the requirements of this Permit.
- ii. Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three

years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, CASQA, or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

- i. **Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface except where one of the following applies. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

- (1) The post-project impervious surface area is less than, or the same as, the pre-project impervious surface area.
- (2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes that extend continuously to the Bay, Delta, or flow-controlled reservoir, or drains to channels that are tidally influenced.
- (3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70% or more impervious).⁸

The Hydromodification Applicability Maps developed by the Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the City of Vallejo, under the Previous Permit remain in effect and are provided in Attachment C to this Permit. Permittees that do not have the location-based applicability criteria (Provision C.3.g.i.(2) – (3)) shown on existing maps shall develop, or require to be developed, new maps, overlays to existing maps, or other equivalent information that demonstrates whether a project falls under one of those two criteria. Such maps, overlays, or other equivalent information shall be acceptable to the Executive Officer and shall not be effective until accepted by the Executive Officer.

ii. HM Standard

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-

⁸ The Permittees' maps accepted for the Previous Permit were prepared using this standard, adjusted to 65% imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for the Previous Permit are accepted as meeting the 70% requirement.

project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, and the City of Vallejo, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow⁹ up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.
- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- (3) **Standard HM Modeling:** Permittees shall use, or shall cause to be used, a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or charts developed using such a model, to design onsite or regional HM controls. The Permittees shall compare, or shall cause to be compared, the pre-project and post-project model output for a long-term rainfall record and shall show that applicable performance criteria in C.3.g.ii.(1)-(3) above are met. HM controls designed using the Bay Area Hydrology Model (BAHM) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual. Modifications to the BAHM shall be acceptable to the Executive Officer, shall be consistent with the requirements of this Provision, and shall be reported as required below:
 - **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
 - **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating

⁹ Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include U.S. EPA's Hydrologic Simulation Program—Fortran (HSPF), the U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and U.S. EPA's Storm Water Management Model (SWMM).

post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

iii. HM Standard – Methodology for Direct Simulation of Erosion Potential

The Permittees may, collectively, propose an additional method, using direct simulation of erosion potential, by which to meet the HM Standard in Provision C.3.g.ii. Such a method shall be submitted to the Water Board for review and shall not be effective until approved by the Executive Officer. At a minimum, a proposal to use this additional method shall demonstrate that stormwater discharges from HM Projects using the method will not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition, and that increases in runoff flow and volume will be managed so that post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. Such demonstration shall include, but not be limited to:

- (1) An appropriately detailed discussion of the theoretical approach behind the method and the results for the areas to which it is proposed to be applied;
- (2) Appropriate continuous simulation hydrologic modeling using Region-specific field data, including creek data (cross sections, longitudinal data, etc.), precipitation data (a record of at least 30 years of hourly data that is appropriately representative of the areas where the method is to be applied), safety factor(s), and HM control designs; and
- (3) A description of how the method will be applied, including any models produced and how they will be used by the Permittees and/or project proponents. Such description shall include a listing of HM controls that may be used to comply with the HM requirements of this Permit, a description, with appropriate technical support, of how they will be sized to comply and how the Permittees will ensure appropriate implementation of the method, and all other necessary information, as appropriate.

iv. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof:

- (1) **Onsite HM controls** are flow duration control structures, LID features and facilities, and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.
- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed

such that the HM Standard is met for all the projects at the point where the regional HM control discharges.

- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.¹⁰

v. **Implementation Level**

All HM Projects shall meet the HM Standard in Provision C.3.g.ii immediately. For Contra Costa Permittees, Projects receiving final planning entitlements on or before January 3, 2018, may be allowed to use the Contra Costa design standards from the Previous Permit. After January 3, 2018, for Contra Costa Permittees, Projects shall comply with the Contra Costa design standards, including any modifications made.

vi. **Reporting**

- (1) New HM Applicability Maps or equivalent information prepared pursuant to Provision C.3.g.i, for those Permittees who do not have an approved Map, shall be submitted, acceptable to the Executive Officer, not later than the second Annual Report following the Permit's effective date.
- (2) Contra Costa Permittees shall, with the 2017 Annual Report, submit a technical report, acceptable to the Executive Officer, consisting of an HM Management Plan describing how Contra Costa will implement the Permit's HM requirements (e.g., how it will update or modify its practices to meet Permit requirements). At a minimum, the technical report shall

¹⁰ In-stream control projects require a Stream Alteration Agreement from CDFW, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

provide additional analysis and discussion as to how existing data appropriately evaluates how existing practices available for use meet the Permit's HM requirements, including limit conditions. The report shall, as necessary, propose modifications to Contra Costa's current HM practices, or propose alternate practices that have been accepted by the Water Board, to meet the Permit's HM requirements. The report may also: provide additional data on monitored installations; provide additional analysis and discussion as to how existing and additional data appropriately evaluates existing practices, including limit conditions and the range of conditions present across Contra Costa County; and provide other information or discussion, as appropriate.

- (3) Reporting of HM projects shall be as described in Provision C.3.b.
- (4) Permittees shall report collectively, with each Annual Report, a listing, summary, and date of modifications made to the BAHM, including the technical rationale. This shall be prepared at the countywide program level and submitted on behalf of participating Permittees.
- (5) In addition, for each HM Project approved during the reporting period, Permittees shall collect and make available the following information. Information shall be reported electronically, and, where appropriate, in tabular form.
 - Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control(s);
 - Method used by the project proponent to design and size the device or method used to meet the HM Standard;
 - Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
 - For projects using standard sizing charts, a summary of sizing calculations used;
 - For projects using the BAHM, a listing of model inputs; and
 - For projects using custom modeling, a summary of the modeling calculations with a corresponding graph showing curve matching (existing, post-project, and post-project-with HM controls curves).

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

- i. **Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:

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- (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
 - (a) The project proponent's signed statement accepting responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the pervious pavement system(s) (if any), onsite, joint, and/or offsite installed stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity; or
 - (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.
 - (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
 - (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed pervious pavement system(s) (if any), stormwater treatment system(s) and HM control(s) (if any).
 - (4) A database or equivalent tabular format of the following:
 - (a) All pervious pavement system(s) that total 3000 square feet or more installed at Regulated Projects, offsite, or at a Regional Project. The total square footage should not include pervious pavement systems installed as private-use patios for single family homes, townhomes, or condominiums.
 - (b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.

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- (c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.
- (5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each Regulated Project, offsite project, and Regional Project:
- (a) Name and address of the project;
 - (b) Names of the owner(s) and responsible operator(s) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and/or HM control(s);
 - (c) Specific description of the location (or a map showing the location) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and HM control(s) (if any);
 - (d) Date(s) that the pervious pavement system(s) (if any), stormwater treatment system(s), and HM controls (if any) was/were installed;
 - (e) Description of the type and size of the pervious pavement systems (if any), stormwater treatment system(s), and HM control(s) (if any) installed;
 - (f) Detailed information on O&M inspections. For each inspection, include the following:
 - (i) Date of inspection.
 - (ii) Type of inspection (e.g., installation, annual, followup, spot).
 - (iii) Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers).
 - (iv) Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well) and an indication of whether the treatment system is an onsite, joint, or offsite system.
 - (v) Type of HM controls inspected.
 - (vi) Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately).
 - (vii) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, compliance schedule, administrative citation, administrative order).
- (6) A prioritized O&M Inspection Plan for inspecting all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

- (a) Inspection by the Permittee of all newly installed pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the completion of installation to ensure approved plans have been followed. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;
- (b) Inspection by the Permittee of an average of 20 percent, but no less than 15 percent, of the total number (at the end of the preceding fiscal year) of Regulated Projects, offsite projects, or Regional Projects. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;
- (c) Inspection by the Permittee of all Regulated Projects, offsite projects, or Regional Projects at least once every five years. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient; and
- (d) For vault-based stormwater treatment systems, Permittees may accept 3rd party inspection reports in lieu of conducting Permittee O&M inspections only if the 3rd party inspections are conducted at least annually. Information from each 3rd party inspection shall be included in the database or tabular format required in Provision C.3.h.ii.(5) and each inspection shall be clearly identified as a 3rd party inspection.

Each 3rd party inspection report must clearly document the following:

- (i) Name of 3rd party inspection company.
- (ii) Date of inspection.
- (iii) Condition of the treatment unit(s) at the time of inspection.
- (iv) Description of maintenance activities performed during the inspection.

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- (v) Date- and time-stamped photographs of the inside of the vault unit(s) before and after maintenance activities.
- (7) An Enforcement Response Plan (ERP) for all O&M inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:
- (a) Enforcement Procedures – A description of the Permittee’s procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, followup inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
 - (b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement systems, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.
 - (c) Timely Correction of Identified Problems – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement systems, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary and more time may be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

iii. Due Date for Implementation: Immediate, except as follows:

- (1) July 1, 2016, for Provision C.3.h.ii.(6) and all requirements pertaining to pervious pavement systems in Provisions C.3.h.ii.(1)-(5), C.3.h.iv., and C.3.h.v.
- (2) July 1, 2017, for Provision C.3.h.ii.(7).

iv. Maintenance Approvals: The Permittees shall ensure that all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement system, stormwater treatment system or HM control has

worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

v. Reporting

- (1) The database or equivalent tabular format required in Provisions C.3.b.ii.(4) and (5) shall be maintained by the Permittees. Upon request from the Executive Officer, information from this database or equivalent tabular format shall be submitted to Water Board staff for review. The requested information may include specific details on each inspection conducted within particular timeframes, such as several fiscal years.
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the Water Board. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.
- (3) Each Permittee shall report the following information in the Annual Report each year:
 - (a) Total number of Regulated Projects in the Permittee's database or tabular format as of the end of the reporting period (fiscal year).
 - (b) Total number of Regulated Projects, offsite projects, and Regional Projects inspected during the reporting period (fiscal year).
 - (c) Percentage of the total number of Regulated Projects that were inspected during the reporting period (fiscal year).
 - (d) A discussion of the inspection findings for the year and any common problems encountered with various types of pervious pavement systems, treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
 - (e) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).
 - (f) For the 2016 Annual Report, Permittees may report on the total number and percentage of treatment and HM controls inspected, and exclude discussion of inspection findings for pervious pavement systems.
- (4) Each Permittee shall certify in the 2017 Annual Report that an Enforcement Response Plan has been completed by July 1, 2017.

C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

- i. Task Description** – The Permittees shall require all development projects, which create and/or replace $\geq 2,500$ ft² to $< 10,000$ ft² of impervious surface, and detached single-family home projects,¹¹ which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:
- Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with permeable surfaces.²
 - Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.²

This provision applies to all development projects that require approvals and/or permits issued under the Permittees' planning, building, or other comparable authority.

- ii. Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

C.3.j. Green Infrastructure Planning and Implementation

- i. Task Description** – The Permittees shall complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.
- (1) The Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is being required, in part, as an alternative to expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace

¹¹ **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

existing impervious surface area. It also provides a mechanism to establish and implement alternative or in-lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.

- (2) Over the long term, the Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.
- (3) The Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee’s jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee’s jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash, PCBs, mercury, and other pollutants.
- (4) The Permittees may comply with any requirement of this Provision through a collaborative effort.

ii. Green Infrastructure Program Plan Development

Each Permittee shall:

- (1) Prepare a framework or workplan that describes specific tasks and timeframes for development of its Green Infrastructure Plan. This framework or workplan shall be approved by the Permittee’s governing body, mayor, city manager, or county manager by June 30, 2017. At a minimum, the framework or workplan shall include a statement of purpose, tasks, and timeframes to complete the elements listed in Provision C.3.j.i.(2) below.
- (2) Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains the following elements:
 - (a) A mechanism (e.g., SFEI’s GreenPlanIT tool or another tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area-specific basis, for implementation over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11. and C.12:
 - (i) By 2020;
 - (ii) By 2030; and

(iii) By 2040.

The mechanism shall include criteria for prioritization (e.g., specific logistical constraints, water quality drivers (e.g., TMDLs), opportunities to treat runoff from private parcels in retrofitted street right-of-way) and outputs (e.g., maps, project lists) that can be incorporated into the Permittee's long-term planning and capital improvement processes.

- (b) Outputs from the mechanism described above, including, but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews completed using these mechanisms are not required to be submitted with the Plan, but shall be made available upon request.
- (c) Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11. and C.12:
 - (i) By 2020;
 - (ii) By 2030; and
 - (iii) By 2040.
- (d) A process for tracking and mapping completed projects, public and private, and making the information publically available (e.g., SFEI's GreenPlanIT tool).
- (e) General guidelines for overall streetscape and project design and construction so that projects have a unified, complete design that implements the range of functions associated with the projects. For example, for streets, these functions include, but are not limited to, street use for stormwater management, including treatment, safe pedestrian travel, use as public space, for bicycle, transit, vehicle movement, and as locations for urban forestry. The guidelines should call for the Permittee to coordinate, for example, street improvement projects so that related improvements are constructed simultaneously to minimize conflicts that may impact green infrastructure.
- (f) Standard specifications and, as appropriate, typical design details and related information necessary for the Permittee to incorporate green infrastructure into projects in its jurisdiction. The specifications shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- (g) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. For street projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects), Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d sizing

requirements. The single approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation. The approach should also consider whether a broad effort to incorporate hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek health and whether such implementation may be appropriate, plus all other information, as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).

- (h) A summary of the planning documents the Permittee has updated or otherwise modified to appropriately incorporate green infrastructure requirements, such as: General Plans, Specific Plans, Complete Streets Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control or Flood Management Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the Permittee's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure. Permittees are expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term.
 - (i) To the extent not addressed above, a workplan identifying how the Permittee will ensure that green infrastructure and low impact development measures are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above).
 - (j) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.
 - (k) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.
- (3) Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.
 - (4) Conduct outreach and education in accordance with the following:
 - (a) Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.

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- (b) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
 - (c) Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.
- (5) Report on Green Infrastructure Planning as follows:
- (a) Each Permittee shall submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
 - (b) Each Permittee shall submit its completed Green Infrastructure Plan with the 2019 Annual Report.
 - (c) Each Permittee shall submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
 - (d) Each Permittee shall submit a summary of its outreach and education efforts in each Annual Report.

iii. Early Implementation of Green Infrastructure Projects (No Missed Opportunities)

Each Permittee shall:

- (1) Prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.
- (2) Submit the list with each Annual Report and a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

iv. Participate in Processes to Promote Green Infrastructure

- (1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding

from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.

- (2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.
- (3) In the 2019 Annual Report, Permittees shall submit a plan and schedule for new and ongoing efforts to participate in processes to promote green infrastructure.

v. Tracking and Reporting Progress

- (1) The Permittees shall, individually or collectively, develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.
- (2) In each Annual Report, Permittees shall report progress on development and implementation of the tracking methods.
- (3) In the 2019 Annual Report, Permittees shall submit the tracking methods and report implementation of green infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.

Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects

Project No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Gross Density DU/Ac	FAR	Special Project Category	LID Treatment Reduction Credit	Stormwater Treatment Systems

Project No: Number of the Special Project as it appears in Table 3.1

Permittee: Name of the Permittee in whose jurisdiction the Special Project will be built.

Address: Address of the Special Project; if no street address, state the cross streets.

Submittal Date: Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

Description: Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

Site Acreage: Total site area in acres.

Gross Density in DU/Ac: Number of dwelling units per acre.

FAR: Floor Area Ratio

Special Project Category: For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff identified in Provision C.3.d. for the Project’s drainage area that will be treated by each treatment system.

C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites that could reasonably be considered to cause or contribute to pollution of stormwater runoff. Permittees shall conduct inspections, effective followup, and enforcement to abate potential and actual non-stormwater discharges, consistent with each Permittee's respective Enforcement Response Plan. These combined efforts will prevent the discharge of pollutants and impacts to beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

- i. **Task Description** – Permittees shall have sufficient legal authority to inspect, require effective stormwater pollutant control, and implement progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.
- ii. **Implementation Level** – Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites which may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial facilities to address pollutant sources associated with outdoor process and manufacturing areas; outdoor material storage areas; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas; outdoor drainage from indoor areas, rooftop equipment; and contaminated and erodible surface areas; and other sources determined by the Permittees or the Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

- i. **Task Description** – Permittees shall continue to update and implement an Inspection Plan that will serve as a prioritized inspection workplan. This Inspection Plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.
- ii. **Implementation Level**
 - (1) **Facilities For Prioritization Into Inspection Plan**

Commercial and industrial facilities with the functional aspects and types described below, and other facilities identified by the Permittees as reasonably likely to contribute to pollution of stormwater runoff, shall be prioritized for inspection on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of

concern, proximity to a waterbody, potential and actual discharge history of the facility, and other relevant factors. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plan:

- (a) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:
 - Outdoor process and manufacturing areas
 - Outdoor material storage areas
 - Outdoor waste storage and disposal areas
 - Outdoor vehicle and equipment storage and maintenance areas
 - Outdoor wash areas
 - Outdoor drainage from indoor areas
 - Rooftop equipment
 - Other sources determined by the Permittee or Water Board as reasonably likely to contribute to pollution of stormwater runoff.
 - (b) The following types of industrial and commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges:
 - Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the Statewide NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
 - Vehicle Salvage yards;
 - Metal and other recycled materials collection facilities, and waste transfer facilities;
 - Vehicle mechanical repair, maintenance, fueling, or cleaning facilities;
 - Building trades central facilities or yards, corporation yards;
 - Nurseries and greenhouses;
 - Building material retailers and storage;
 - Plastic manufacturers; and
 - Other facilities designated by the Permittee or Water Board to be reasonably likely to contribute to pollution of stormwater runoff.
- (2) Inspection Plan – The Inspection Plan shall be updated annually and shall contain the following information:
- (a) A description of the process for prioritizing inspections and frequency of inspections. The prioritization criteria shall assign a more frequent inspection schedule to the highest priority facilities per Provision C.4.b.ii.(1). If any geographical areas are to be targeted for

inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan.

- (b) Assign appropriate inspection frequency for each industrial and commercial facility based on the priority established in Provision C.4.b.ii.(2)(a) above, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.
 - (c) A mechanism to include new businesses that warrant inspections.
 - (d) Total number and a list of all industrial and commercial facilities requiring inspections, within each Permittee's jurisdiction, based on the prioritization criteria established in Provision C.4.(b)ii.(2)(a). This list shall be updated annually.
 - (e) List of facilities scheduled for inspection each fiscal year of the MRP permit term. Each fiscal year's inspection list shall be added to the Inspection Plan at the beginning of the fiscal year as part of the annual update. Previous fiscal years' inspection lists shall remain in the Inspection Plan.
- (3) **Record Keeping** – For each facility identified in Provision C.4.b.ii.(2)(d), the Permittee shall maintain a database or equivalent tabular system of at least the following information:
- (a) Name and address of the business and local business operator;
 - (b) A brief description of business activity or pollutant source, including SIC code. Examples: outdoor process/manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, rooftop equipment, and outdoor drainage from indoor areas;
 - (c) Inspection priority and inspection frequency; and
 - (d) If coverage under the Industrial General Permit is required.
- iii. **Reporting** – The Permittees shall include the list of all industrial and commercial facilities requiring inspections identified in Provision C.4.b.ii.(2)(d) in each Annual Report.

C.4.c. Enforcement Response Plan (ERP)

- i. **Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all commercial and industrial site operators.
- ii. **Implementation Level** – The ERP shall contain the following:
 - (1) **Enforcement Procedures** – A description of the Permittee's procedures, from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions,

and the roles and responsibilities of staff responsible for implementing the ERP.

- (2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual non-stormwater discharges, lack of BMPs, inadequate BMPs, and inappropriate BMPs), actual non-stormwater discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual non-stormwater discharges.
- (3) Timely Correction of Potential and Actual Non-stormwater Discharges – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual non-stormwater discharges. Permittees shall require active non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual non-stormwater discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business day are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.
- (4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual non-stormwater discharges required in Discharge Prohibition A.1. For cases in which Permittee enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement.

C.4.d. Inspections

i. Task Description – Each Permittee shall conduct inspections according to the Inspection Plan in Provision C.4.b.ii.(2) and the ERP in Provision C.4.c.ii. to enforce its ordinance to prevent stormwater pollution.

ii. Implementation Level

- (1) Inspections – Inspections shall be conducted to include at least the following activities:
 - (a) Observations for appropriate BMPs to prevent stormwater runoff pollution or illicit discharge;
 - (b) Observations for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater;
 - (c) Observations for noncompliance with Permittee ordinances and other local requirements; and
 - (d) Verification of coverage under the Industrial General Permit, if applicable.

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- (2) Record Keeping – Permittees shall maintain adequate records to demonstrate compliance and appropriate followup enforcement responses for facilities inspected. Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial and commercial site inspections:
 - (a) Name of facility/site inspected
 - (b) Inspection date
 - (c) Industrial General Permit coverage required (Yes or No)
 - (d) Compliance status
 - (e) Specific problems
 - (f) Type of enforcement (if applicable)
 - (g) Problem resolution date
 - (h) Additional comments

The electronic database or equivalent tabular system shall be made readily available to Water Board staff or its representative during inspections and audits.

- (3) Data Evaluation – Permittees shall evaluate the frequency of potential and actual non-stormwater discharges by business category. Note trends and, as needed, implement focused inspections or education in subsequent years to address trends.

iii. Reporting

- (1) Permittees shall include the following information in the 2015-2016 Annual Report:
 - (a) Number of inspections conducted, Number of violations issued (excluding verbal warnings), Percentage of sites inspected in violation, and number and percent of violations resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;
 - (b) Frequency and types/categories of violations observed, Frequency and type of enforcement conducted;
 - (c) Summary of types of violations noted by business category; and
 - (d) Facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.
- (2) Beginning with the 2016-2017 Annual Report, Permittees shall include the following information in each Annual Report:
 - (a) Number of inspections conducted;
 - (b) Number of each type of enforcement action, as listed in each Permittee's ERP, issued;
 - (c) Number of enforcement actions or discreet number of potential and actual discharges fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;

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- (d) Frequency of potential and actual non-stormwater discharges by business category; and
 - (e) A list of facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

C.4.e. Staff Training

- i. Task Description** – Permittees shall provide focused training for industrial and commercial site inspectors and illicit discharge detection and elimination inspectors annually. Trainings may be program-wide, region-wide, or Permittee-specific.
- ii. Implementation Level** – At a minimum, provide inspection training, within the 5-year term of this Permit, in the following topics:
 - (1) Urban runoff pollution prevention;
 - (2) Inspection procedures;
 - (3) Business Inspection Plan;
 - (4) Enforcement Response Plan;
 - (5) Illicit Discharge Detection and Elimination; and
 - (6) Appropriate BMPs to be used at different industrial and commercial facilities.
- iii. Reporting** – The Permittees shall include the following information in each Annual Report:
 - (1) Dates of training;
 - (2) Training topics covered;
 - (3) Percentage of industrial and commercial site inspectors attending training; and
 - (4) Percentage of Illicit Discharge, Detection, and Elimination inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to ensure illicit discharges are detected and controlled that are not otherwise controlled under provisions C.4. – Industrial and Commercial Site Controls and C.6. – Construction Site Controls. Permittees shall implement an illicit discharge program that includes an active surveillance component and a centralized complaint collection and followup component to detect and eliminate illicit discharges into the MS4. Permittees shall maintain a complaint tracking and followup data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

- i. Task Description** – Permittees shall have the legal authority to prohibit and control illicit discharges and implement progressively stricter enforcement to achieve expedient compliance.
- ii. Implementation Level**
 - (1) Permittees shall have adequate legal authority to address illicit discharges to the MS4, including, but not limited to, the following:
 - (a) Sewage;
 - (b) Discharges of wash water resulting from the cleaning of exterior surfaces and pavement, or the equipment and other facilities of any commercial business, or any other public or private facility, including discharges from mobile cleaning businesses;
 - (c) Discharges of runoff from material storage areas, including those containing chemicals, fuels, or other potentially polluting or hazardous materials;
 - (d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
 - (e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and
 - (f) Discharges of food-related wastes (e.g., grease, fish processing wastes, restaurant kitchen mat and trash bin wash water).
 - (2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to the MS4.
 - (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to the MS4.

C.5.b. Enforcement Response Plan (ERP)

- i. Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to

achieve timely and effective abatement of illicit discharges and compliance from responsible parties.

ii. Implementation Level – The ERP shall contain the following:

- (1) **Enforcement Procedures** – A description of the Permittee’s procedures from the discovery of a problem through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
- (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of BMPs, inadequate BMPs, and inappropriate BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.
- (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and/or actual discharges. Active discharges shall be required to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

C.5.c. Spill, Dumping, and Complaint Response Program

i. Task Description – Each Permittee shall implement a program to respond to spills, dumping, and complaints.

ii. Implementation Level

- (1) Each Permittee shall have a central contact point for the public and Permittee’s staff to report spills, dumping, and complaints. At a minimum, this central contact point shall include a phone number. Permittee shall also include, as feasible, user friendly web reporting for spills and dumping.
- (2) Each Permittee shall publicize the phone number and web reporting address, if used, to internal Permittee’s staff and the public. The Permittee’s website shall be one of the places the central contact point is publicized. The Permittee’s website shall be updated with the central contact point to report spills and dumping by June 30, 2016. This central contact point shall be readily searchable on the Permittee’s website.

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- (3) Each Permittee shall require its municipal staff conducting routine maintenance and inspection activities to report illicit discharges found during their activities to the central contact point so that illicit discharge staff can investigate and track.
 - (4) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and/or phone tree for the Permittee's staff responsible for the spill and dumping response program. At a minimum, this flow chart and/or phone tree shall identify staff or positions responsible for receiving the complaints and investigating and abating the complaints.
 - (5) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittee's immediate capabilities.
 - (6) Each Permittee shall conduct reactive inspections in response to spill, dumping, and complaint reports and shall also conduct followup inspections, as needed, to ensure that corrective measures have been effectively implemented to achieve and maintain compliance.

iii. Reporting – Permittees shall provide the following information in the 2016 and 2020 Annual Reports:

- (1) The spill and dumping reporting phone number and the web address, if used;
- (2) A screen shot of the Permittee's website showing the central contact point; and
- (3) A discussion of how the central contact point – spill and dumping reporting phone number and, if used, the web address – is being publicized to Permittees' staff and the public.

C.5.d. Tracking and Case Followup

- i. Task Description** – All incidents or discharges reported to the spill, dumping, and complaints central contact point, that might discharge into the MS4, shall be logged to track followup and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems and inter/intra-agency coordination, where appropriate. It is not necessary to track and report data according to this provision if they are tracked and reported according to State Water Resource Control Board Order No. 2006-0003-DWQ.
- ii. Implementation Level** – Maintain a water quality spills, dumping, and complaints tracking and followup in an electronic database or equivalent tabular system.

The spill and discharge complaint tracking system shall contain the following information:

- (1) Complaint information:
 - (a) Date and time of complaint,
 - (b) Type of pollutant, and
 - (c) Problem Status (potential or actual discharge.).
- (2) Investigation information:
 - (a) Date and time started,
 - (b) Type of pollutant,
 - (c) Entered storm drain and/or receiving water,
 - (d) Date and time abated, and
 - (e) Type of enforcement based on the Permittee's ERP.

The electronic database or equivalent tabular system shall be made available to Water Board staff or representatives during audits or inspections.

iii. Reporting – Permittees shall provide the following information in the Annual Report:

- (1) Number of discharges reported;
- (2) Number of discharges reaching storm drains and/or receiving waters; and
- (3) Number discharges resolved in a timely manner.

C.5.e. Control of Mobile Sources

i. Task Description – Permittees shall have oversight and control of pollutants associated with mobile businesses.

ii. Implementation Level – Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.

- (1) The program shall include the following:
 - (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, such as automobile washing, power washing, steam cleaning, and carpet cleaning.
 - (b) Implementation of an enforcement strategy that specifically addresses the unique characteristics of mobile businesses.
 - (c) Regularly updating mobile business inventories.
 - (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee's jurisdiction.
 - (e) Inspection of mobile businesses, as needed.
- (2) Permittees may cooperate county-wide and/or region-wide with the implementation of their programs for mobile businesses, including sharing

of mobile business inventories, BMP requirements, enforcement action information, and education.

iii. Reporting

- (1) In the 2017 Annual Report, each Permittee shall provide the following: (a) minimum standards and BMPs for each of the various types of mobile businesses; (b) its enforcement strategy; (c) a list and summary of the specific outreach events and education conducted to the different types of mobile businesses operating within the Permittee's jurisdiction; (d) the number of inspections conducted at mobile businesses and/or job sites in 2016-2017; (e) discuss enforcement actions taken against mobile businesses in 2016-2017; (f) Permittee's inventory of mobile businesses operating within the Permittee's jurisdiction; and (g) a list and summary of the county-wide or regional activities conducted, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education (Permittees' annual reports may refer to the county-wide or regional reports for this information.).
- (2) In the 2019 Annual Report, each Permittee shall include at least the following: (a) changes to minimum standards and BMPs for each of the various types of mobile businesses since the 2017 Annual Report; (b) changes to the Permittee's enforcement strategy; (c) minimum standards and BMPs developed for additional types of mobile businesses; (d) a list and summary of specific outreach events and education conducted to each type of mobile businesses operating within the Permittee's jurisdiction during the Permit term; (e) a discussion of the inspections conducted at mobile businesses and/or job sites; (f) Permittee's inventory of mobile businesses operating within the Permittee's jurisdiction; and (g) a discussion of the enforcement actions taken against mobile businesses during the permit term.

C.5.f. Municipal Separate Storm Sewer System (MS4) Map

- i. **Task Description** – Each Permittee shall make the map(s) of its MS4 available.
- ii. **Implementation Level** – Permittees shall make maps of the MS4 publicly available, either electronically or in hard copy. Public availability shall be made through a single point of contact that is convenient for the public, such as a staffed counter or web accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.
- iii. **Reporting** – In the 2016 and 2019 Annual Reports, Permittees shall discuss how they make MS4 maps available to the public and how they publicize the availability of the MS4 maps.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with followup and enforcement consistent with each Permittee's respective ERP, to prevent construction site discharges of pollutants into the storm drains. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers. Each Permittee shall in its reporting demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

C.6.a. Legal Authority for Effective Site Management

- i. Task Description** – Permittees shall have the ability to require effective stormwater pollutant controls to prevent discharge of pollutants into the storm drains, and implement progressively stricter enforcement to achieve expedient compliance and cleanup at all public and private construction sites.
- ii. Implementation Level**
 - (1) Permittees shall have the legal authority to require at all construction sites year-round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-storm water management through all phases of construction (including, but not limited to, site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
 - (2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and cleanup at all construction sites year-round.

C.6.b. Enforcement Response Plan (ERP)

- i. Task Description** – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance at all public and private construction sites.
- ii. Implementation Level** – The ERP shall contain the following:
 - (1) **Enforcement Procedures** – A description of the Permittee's procedures from the discovery of the problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.
 - (2) **Enforcement Tools and Field Scenarios** – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of ERP, inadequate BMPs, and inappropriate

BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.

- (3) **Timely Correction of Potential and Actual Discharges** – A description of the Permittee’s procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual discharges. Permittees shall require actual non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

C.6.c. Best Management Practices Categories

- i. **Task Description** – Permittees shall require all construction sites to have site-specific, and seasonally and phase-appropriate, effective BMPS) in the following six categories:

- Erosion Control
- Run-on and Run-off Control
- Sediment Control
- Active Treatment Systems, as necessary
- Good Site Management
- Non-Stormwater Management.

- ii. **Implementation Level**

The BMPs targeting specific construction site pollutants within the six categories listed in C.6.c.i. shall be site-specific. Site-specific BMPs targeting specific pollutants from the six categories listed in C.6.c.i. may be a combination of BMPs from:

- CASQA, BMP Handbook, Construction, January 2009.
- Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, and addenda.
- New BMPs available since the release of these handbooks.
- Other BMPs shown to provide equivalent protection.

C.6.d. Plan Approval Process

- i. **Task Description** – Permittees shall review erosion control plans for consistency with local requirements and the appropriateness and adequacy of proposed BMPs for each site before issuance of grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for permit coverage under the Construction General Permit.

ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

- (1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in C.6.c.i. are planned;
- (2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction General Permit; and
- (3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in C.6.c.i. in preventing the discharge of construction pollutants into the storm drain; and Permittees shall require timely corrections of all actual and potential discharges observed.

ii. Implementation Level

(1) Wet Season Notification

By September 1 of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil, hillside projects, and high priority sites to prepare for the upcoming wet season.

(2) Frequency of Inspections

Inspections shall be conducted monthly during the wet season¹² at the following sites:

- (a) All construction sites disturbing one or more acre of land;
- (b) All hillside projects¹³ (based on the Permittee's map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with $\geq 15\%$ slope) disturbing greater than or equal to 5,000 square feet; and
- (c) High Priority Sites – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:
 - (i) Soil erosion potential or soil type;
 - (ii) Site slope;

¹² For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

¹³ Effective July 1, 2016.

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- (iii) Project size and type;
 - (iv) Sensitivity or receiving waterbodies;
 - (v) Proximity to receiving waterbodies;
 - (vi) Non-stormwater discharges; and
 - (vii) Any other relevant factors as determined by the local agency or the Water Board.

(3) **Contents of Inspections**

Inspections shall focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i. Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

- (a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from C.6.d.ii.(1));
- (b) Assessment of the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i.;
- (c) Visual observations for:
 - actual discharges of sediment and/or construction related materials into storm drains and/or waterbodies.
 - evidence of sediment and/or construction related materials discharges into storm drains and/or waterbodies.
 - illicit connections, and
 - potential illicit connections.
- (d) Education on stormwater pollution prevention, as needed.

(4) **Tracking**

All inspections shall be recorded on a written or electronic inspection form. Inspectors shall follow the ERP for all actual and potential discharges discovered during the inspection.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

- (a) Site name;
- (b) Inspection date;
- (c) Weather during inspection;
- (d) Enforcement Response Level (Use ERP);
- (e) Problem(s) observed using Illicit Discharge and the six BMP categories listed in C.6.c.i.;

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- (f) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
 - (g) Comments, which shall include all Rationales for Longer Compliance Time, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

- (1) In the 2016 Annual Report, each Permittee shall certify the criteria it uses to determine hillside developments. If the Permittee is using maps of hillside developments areas or other written criteria, include a copy in the Annual Report.
- (2) In the 2015-2016 Annual Report, each Permittee shall summarize the following information:
 - (a) Total number of active sites disturbing less than one acre of soil requiring inspection;
 - (b) Total number of active sites disturbing one acre or more of soil;
 - (c) Total number of inspections conducted;
 - (d) Number and percentage¹⁴ of violations in each of the six categories listed in C.6.c.i.;
 - (e) Number and percentage¹⁵ of each type of enforcement action taken as listed in each Permittee's ERP;
 - (f) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;
 - (g) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;
 - (h) Number and percentage¹⁶ of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered in a timely, though longer period; and
 - (i) Number and percentage¹⁷ of violations not fully corrected 30 days after the violations are discovered.
- (3) Beginning with the 2016-2017 Annual Report, each Permittee shall summarize the following information:

¹⁴ Percentage shall be calculated as number of violations in each category divided by total number of violations in all six categories.

¹⁵ Percentage shall be calculated as number of each type of enforcement action divided by the total number of enforcement actions.

¹⁶ Percentage shall be calculated as follows: number of violations fully corrected prior to the goal of the next rain event but no later than 10 business days after the violations are discovered divided by the total number of violations for the reporting year.

¹⁷ Percentage shall be calculated as follows: number of violations not fully corrected 30 days after the violations are discovered divided by the total number of violations for the reporting year.

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- (a) Total number of active hillside sites disturbing less than one acre of soil requiring inspection;
 - (b) Total number of active sites disturbing 1 acre or more of soil;
 - (c) Total number of active sites disturbing less than one acre of soil identified as High Priority sites in C.6.e.ii.(2)(c) requiring inspections;
 - (d) Total number of inspections conducted;
 - (e) Number of each type of enforcement action taken as listed in each Permittee's ERP;
 - (f) Number of illicit discharges, actual and those inferred through evidence, of sediment or other construction-related materials;
 - (g) Number of enforcement actions or discrete number of potential and actual discharges fully corrected prior to the next rain event, but no longer than 10 business days after the potential and actual discharges¹⁸ are discovered or otherwise considered corrected in a timely, though longer period.
- (4) In each Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in C.6.e.ii.(4) above. This evaluation shall include findings on the program's strength, comparison to previous years' results, as well as areas that need more focused education for site owners, operators, and developers the following year.
 - (5) The Executive Officer may require that the information recorded and tracked by C.6.e.ii.(4) be submitted electronically or in a tabular format. Permittees shall submit the information within 10 working days of the Executive Officer's requirement. Submittal of the information in tabular form for the reporting year is not required in each Annual Report, but it is encouraged.

C.6.f. Staff Training

- i. Task Description** – Permittees shall provide training or access to training for staff conducting construction stormwater inspections.
- ii. Implementation Level** – Permittees shall provide training at least every other year to municipal staff responsible for conducting construction site stormwater inspections. Training topics shall include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and the ERP.
- iii. Reporting** – Permittees shall include in each Annual Report the following information: training topics covered, dates of training, and the number of the Permittees' inspectors attending each training. If there was no training in that year, so state.

¹⁸ Permittees who track by discrete potential and actual discharges shall report by discrete discharges. Permittees who track by enforcement actions shall report by enforcement actions.

C.7. Public Information and Outreach

Each Permittee shall increase the awareness of a broad spectrum of the community, including a diversity of socioeconomic groups and ethnic communities, regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate the problems caused; positively influence the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve various citizens in mitigating the impacts of stormwater pollution. Outreach required in other provisions may be conducted under Provision C.7.

C.7.a. Storm Drain Inlet Marking

- i. **Task Description** – Permittees shall mark and maintain municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. For newly-approved, privately maintained streets, Permittees shall require storm drain inlet markings with an appropriate stormwater pollution prevention message by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings on the storm drain inlets shall be verified prior to acceptance of the project.
- ii. **Implementation Level**
 - (1) Inspect and maintain storm drain inlet markings of at least 80 percent of municipality-maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.
 - (2) Storm drain inlet markings of newly developed privately-maintained streets shall be verified prior to acceptance of the project. Permittees shall require maintenance of the storm drain inlet markings through the development maintenance entity.
- iii. **Reporting** – In the 2020 Annual Report, each Permittee shall (1) state how many municipally-maintained storm drain inlets it has, (2) certify that at least 80 percent of municipality-maintained storm drain inlet markings are legibly labeled with an appropriate stormwater pollution prevention message during the permit term; (3) include a picture of a labeled municipality-maintained inlet; and (4) certify that all privately-maintained streets had storm drain inlet markings verified prior to acceptance of the project and were required to maintain the storm drain inlet markings through the development maintenance entity.

C.7.b. Outreach Campaigns

- i. **Task Description** – Permittees shall continue to participate in or contribute to outreach campaigns, with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audiences.
- ii. **Implementation Level**
 - (1) Target a broad audience with a minimum of one outreach campaign with specific stormwater runoff pollution prevention messages. The outreach

campaign(s) should utilize various electronic and print media, and paid and free media to best reach the different target audiences. The outreach campaign(s) may be coordinated regionally or county-wide.

- (2) Permittees shall conduct a post-campaign effectiveness assessment/evaluation to identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population's awareness of the messages and behavior changes achieved by the outreach campaigns. Effectiveness assessment/evaluation may be done regionally or county-wide.

iii. Reporting – In the Annual Report following the post-campaign effectiveness assessment/evaluation, each Permittee (or the Countywide Program, if the effectiveness assessment/evaluation was done county-wide or the regional program, if the effectiveness assessment/evaluation was done regionally) shall provide a report of the effectiveness assessment/evaluation completed, which, at minimum, shall include the following:

- (1) A description of the outreach campaign.
- (2) A summary of how the effectiveness assessment/evaluation was implemented.
- (3) An analysis of the effectiveness assessment/evaluation results.
- (4) A discussion of the measurable changes in awareness and behavior achieved.
- (5) A discussion of the planned or future outreach campaigns to influence awareness and behavior changes regarding stormwater runoff pollution prevention messages.

C.7.c. Stormwater Pollution Prevention Education

i. Task Description – Permittees shall continue to maintain a point of contact to provide the public with stormwater pollution prevention information.

ii. Implementation Level

- (1) Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively and Permittees may combine this function with the spill and dumping complaint central contact point required in C.5.
- (2) Each Permittee shall place and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website. In lieu of posting the detailed informational pages directly on their individual websites, Permittees may choose to provide links from their websites to the countywide program's and/or BASMAA's websites. Each Permittee shall publicize its website.

- iii. **Reporting** – In the 2016 Annual Report, each Permittee shall list the point of contact, discuss how this point of contact and stormwater pollution website are publicized and maintained, and certify that it has a website dedicated to providing and maintaining information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives.

C.7.d. Public Outreach and Citizen Involvement Events

- i. **Task Description** – Public outreach shall include a variety of pollution prevention message such as car washing; proper use, storage and disposal of vehicle waste fluids; household waste materials disposal; pesticide use; and trash. Public outreach events may include venues such as fairs, shows, and workshops. Citizen involvement events may include venues such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, storm drain inlet marking, riparian restoration activities, community grants.
- ii. **Implementation Level** – Each Permittee shall annually participate and/or host a mix of public outreach and citizen involvement events according to its population, as shown in the table below:

Table 7.1 Public Outreach and Citizen Involvement Events¹⁹

Permittee Population	Number of Events
< 10,000	2
10,001– 40,000	4
40,001 – 100,000	5
100,001 – 175,000	7
175,001 – 250,000	8
> 250,000	10
Non-population-based Permittees ²⁰	6

- iii. **Reporting** – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in; identity whether the event is public outreach or citizen involvement; and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event effectiveness assessment/evaluation results, quantity/volume of materials cleaned up and comparisons to previous efforts).

C.7.e. Watershed Stewardship Collaborative Efforts

- i. **Task Description** – Permittees shall individually or collectively encourage and support watershed stewardship collaborative efforts of community groups such as the Contra Costa Watershed Forum, the Santa Clara Basin Watershed

¹⁹ Permittees may claim individual credits for all events in which their Countywide Program or BASMAA participates, supports, and/or hosts, which are publicized to reach the Permittee’s jurisdiction.

²⁰ Alameda County Flood Control and Water Conservation District, Contra Costa Flood Control and Water Conservation District, Santa Clara Valley Water District, Vallejo Sanitation and Flood Control District, and Zone 7 of the Alameda County Flood Control and Water Conservation District

Management Initiative, “friends of creek” groups, and other organizations that benefit the health of the watershed, such as the Bay-Friendly Landscaping and Gardening Coalition. If no such organizations exist, encourage and support development of grassroots watershed groups or engagement of an existing group, such as a neighborhood association, in watershed stewardship activities. Coordinate with existing groups to further stewardship efforts.

- ii. **Implementation Level** – Annually demonstrate effort.
- iii. **Reporting** – In each Annual Report, each Permittee shall state the level of effort, describe the support given, state what efforts were undertaken and the results of these efforts, and provide an evaluation of the effectiveness of these efforts.

C.7.f. School-Age Children Outreach

- i. **Task Description** – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-age children (K through 12).
- ii. **Implementation Level** – Implement annually and demonstrate effectiveness of efforts through assessment.
- iii. **Reporting** – In each Annual Report, each Permittee shall state the level of effort, spectrum of children reached, and methods used, and provide an evaluation of the effectiveness of these efforts.

C.7.g. Outreach to Municipal Officials

- i. **Task Description** – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.
- ii. **Implementation Level** – At least once per permit cycle, or more often.
- iii. **Reporting** – Permittees shall summarize efforts in the 2020 Annual Report.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

All Permittees shall comply with all the monitoring requirements in this Provision. Permittees may choose any of the following mechanisms, or a combination of these mechanisms, to meet the monitoring requirements:

- i. **Regional Collaboration.** Permittees are encouraged to continue contributing to the Regional Monitoring Collaborative (RMC), which coordinates water quality monitoring conducted by all the Permittees. Permittees are encouraged to consider and assign additional duties to the RMC for purposes of increased efficiencies, particularly, but not limited to, reporting duties.
- ii. **Area-wide Stormwater Program.** Permittees may contribute to their countywide or area-wide Stormwater Program, so that the Stormwater Program conducts monitoring on behalf of its members.
- iii. **Third-party Monitoring.** Permittees may use data collected by a third-party organization, such as the Water Board or Department of Pesticide Regulation, to fulfill a monitoring requirement, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.b.

C.8.b. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPrP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

C.8.c. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions²¹ such as:

- Are chemical concentrations in the Estuary potentially at levels of potential concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?
- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?

²¹ <http://www.sfei.org/rmp/objectives> (9/15/2014). While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

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- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

The Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair-share financially on an annual basis.

C.8.d. Creek Status Monitoring

Creek status monitoring is intended to assess the chemical, physical, and biological impacts of urban runoff on receiving waters. In particular, the monitoring required by this provision is intended to answer the following questions:

- Are water quality objectives, both numeric and narrative, being met in local receiving waters, including creeks, rivers and tributaries?
- Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?

i. Biological Assessment including Nutrients and General Water Quality Parameters

- (1) Field and Laboratory Method – The Permittees shall conduct biological assessments (also referred to herein as bioassessments) in accordance with SWAMP Standard Operating Procedures^{22,23,24} and shall include collection and reporting of in-stream biological and physical habitat data according to the *SWAMP Standard Operating Procedures for Bioassessment*,³ including benthic algae, benthic macroinvertebrates, water chemistry, and full characterization of physical habitat. The bioassessment sampling method shall be multihabitat reach-wide. For algae, the assessment shall include all analytes in the protocol, including diatom and soft algae taxonomy, biomass (ash-free dry weight), chlorophyll a, pebble count algae information, and reach-wide algal percent cover. Physical Habitat (PHab) Assessment shall include the SWAMP full physical habitat characterization method.

²² Ode, P.R. 2007. *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California*, State Water Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised [http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/swamp_sop_bio.pdf].

²³ Current methods are documented in (1) *SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments*, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, May 21, 2007, and (2) *Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP Bioassessments*, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, September 17, 2008 both available at http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#methods.

²⁴ The Standard Operating Procedure for algae sampling and evaluation is available in the following: Fetscher, A. and K. McLaughlin, May 16, 2008. *Incorporating Bioassessment Using Freshwater Algae into California's Surface Water Ambient Monitoring Program (SWAMP)*. Technical Report 563 and current SWAMP-approved updates to Standard Operating Procedures therein. Available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/563_periphyton_bioassessment.pdf.

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- (2) The sampling crew shall be trained by a SWAMP-approved trainer and possess a Scientific Collection Permit from the California Department of Fish and Wildlife and participate in a SWAMP-approved inter-calibration exercise at least once in the Permit term. The Permittee may, but is not required to, modify its sampling procedures if these referenced procedures change during the Permit term. In such case, the Permittee shall notify the Water Board and follow the updated SWAMP procedures.
 - (3) Macroinvertebrates shall be identified and classified according to the *Standard Taxonomic Effort (STE) Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT)*²⁵ (except Chironomids should be identified to subfamily) using a fixed count of 600 organisms per sample. The laboratory shall follow the *SWAMP Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*.²⁶ Soft-bodied algae and diatom algae shall be identified to the species level. Algae identifications must be harmonized with the SWAMP master taxa list. All quality assurance and quality control steps specified in the *SWAMP Quality Assurance Program Plan*¹ shall be performed.
 - (4) The Permittees shall measure general water quality parameters using a sonde and collect nutrient samples at a site when biological samples are collected. The general water quality parameters shall include temperature, dissolved oxygen, pH, and specific conductance. Nutrients samples shall be analyzed for total ammonia, nitrate, nitrite, total Kjeldahl nitrogen, total nitrogen (calculated), dissolved orthophosphate and total phosphorous, silica, and chloride.
 - (5) In conducting the required bioassessment monitoring, the Permittees shall take precautions to prevent the introduction or spread of aquatic invasive species.
 - (6) Sample Design/Locations – The Permittees shall continue to use the probabilistic sample design developed in the previous Permit term to select sample locations. Also, Permittees shall continue to use the sampling site order and the rationale to exclude potential sites as previously defined by the sample design and reconnaissance standard operating procedures. After a statistically representative data set (i.e., approximately 30 samples) has been collected to address management questions related to condition of aquatic life, Permittees may select up to 20% of sample locations on a targeted basis to evaluate temporal trends in or other impacts to aquatic life condition.

²⁵ The current SAFIT STEs (November 28, 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at http://www.waterboards.ca.gov/water_issues/programs/swamp/safit.shtml. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

²⁶ http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bmi_lab_sop_final.pdf.

- (7) Frequency, Timeframe and Number of Sites – Sampling shall occur once per year during the appropriate index period (April 15-June 30) with consideration of antecedent rainfall. Sampling is a one-time grab sample for biological communities, nutrients, and general water quality collected on the same day. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Samples
Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

- (8) Followup – Sites scoring less than 0.795 according to the California Stream Condition Index²⁷ (CSCI) are appropriate for a Stressor Source Identification (SSID) project as defined in C.8.e. Such a score indicates a substantially degraded biological community relative to reference conditions. Sites where there is a substantial difference in CSCI score observed at a location relative to upstream or downstream sites are also appropriate for a SSID project. If many samples show a degraded biological condition, sites where water quality is most likely to cause and contribute to this degradation may be prioritized by the Permittee for a SSID project.

ii. Chlorine

- (1) Field and Laboratory Method – Permittees shall collect a grab sample and analyze for free and total chlorine using methods specified in the BASMAA Regional Monitoring Coalition Creek Status Monitoring Program Standard Operating Procedures.
- (2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations near known or suspected potable water line breaks; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where chlorine has been found in the past.
- (3) Frequency, Timeframe, and Number of Samples – Samples shall be collected in spring or summer. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

²⁷ Documentation for the CSCI and information on calculating scores can be found at http://www.swrcb.ca.gov/plans_policies/biological_objective.shtml.

Sampling Agency	Minimum Number of Locations Sampled
Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

- (4) Followup – The Permittees shall immediately resample if the chlorine concentration is greater than 0.1 mg/L. If the resample is still greater than 0.1 mg/L, then Permittees shall report the observation to the appropriate Permittee central contact point for illicit discharges so that the illicit discharge staff can investigate and abate the associated discharge in accordance with its Provision C.5.e - Spill and Dumping Complaint Response Program.

iii. Temperature

- (1) Field Method – The Permittees shall monitor temperature of their streams using a digital temperature logger or equivalent.
- (2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries and where either past data or best professional judgment indicates that temperatures may negatively affect that beneficial use.
- (3) Frequency, Timeframe and Number of Sites – Loggers shall be installed so that water temperatures are recorded at 60-minute intervals from April through September at the number of sites specified below. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Stream Reaches Sampled
Alameda Permittees	8 per year
Santa Clara Permittees	8 per year
Contra Costa Permittees	4 per year
San Mateo Permittees	4 per year
Fairfield-Suisun Permittees	2 per 5-year period
Vallejo Permittees	2 per 5-year period

- (4) Followup – The Permittees shall identify a site for which results at one sampling station exceed the applicable temperature trigger or demonstrate a spike in temperature with no obvious natural explanation as a candidate SSID project. The temperature trigger is defined as when two or more weekly average temperatures exceed the Maximum Weekly Average Temperature of 17.0°C for a Steelhead stream, or when 20% of the results

at one sampling station exceed the instantaneous maximum of 24°C.²⁸ Permittees shall calculate the weekly average temperature by breaking the measurements into non-overlapping, 7-day periods.

iv. Continuous Monitoring of Dissolved Oxygen, Temperature, and pH

- (1) Field and Laboratory Method – The Permittees shall monitor general water quality parameters of streams using a water quality sonde or equivalent. Parameters shall include dissolved oxygen (mg/L and % saturation), pH, specific conductance (µS), and temperature (°C).
- (2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries or where either past data or best professional judgment indicates that temperature may negatively affect the cold water beneficial use.
- (3) Frequency, Timeframe, and Number of Sites – The Permittees shall install sondes so that parameters are recorded at 15-minute intervals over 1-2 weeks in the spring concurrent with bioassessment sampling and 1-2 weeks in summer at the same sites. The Permittees shall monitor at least the minimum number of sites as shown below:

Sampling Agency	Minimum Number of Sample Sites in Spring	Minimum # of Sample Sites in Summer
Alameda Permittees	3 per year	3 per year
Santa Clara Permittees	3 per year	3 per year
Contra Costa Permittees	2 per year	2 per year
San Mateo Permittees	2 per year	2 per year
Fairfield-Suisun Permittees	2 per permit term	2 per 5-year period
Vallejo Permittees	2 per permit term	2 per 5-year period

- (4) Followup – When results at one sampling station exceed the applicable temperature or dissolved oxygen trigger or demonstrate a spike in temperature or drop in dissolved oxygen with no obvious natural explanation, the Permittees shall identify that sample site as a candidate SSID project. The Permittees shall calculate the weekly average temperature and dissolved oxygen by separating the measurements into non-overlapping, 7-day periods. The temperature trigger is defined as any of the following:
 - a. Maximum Weekly Average Temperature exceeds 17.0°C for a Steelhead stream, or 20 percent of the instantaneous results exceed 24°C⁸;

²⁸ This maximum weekly average temperature trigger corresponds to a 10% reduction in growth as listed in Table 7.3 in Sullivan K., Martin, D.J., Cardwell, R.D., Toll, J.E., Duke, S. 2000. *An Analysis of the Effects of Temperature on Salmonids of the Pacific Northwest with Implications for Selecting Temperature Criteria, Sustainable Ecosystem Institute*. The 24°C acute lethal threshold is the more protective threshold cited on page 4-1 in Sullivan et al. (2000).

- b. 20 percent of instantaneous pH results are < 6.5 or > 8.5;
- c. 20 percent of the instantaneous specific conductance results are > 2000µS, or there is a spike in readings with no obvious natural explanation; or
- d. 20 percent of instantaneous dissolved oxygen results are < 7 mg/L in a cold water fishery stream.

v. Pathogen Indicators

- (1) Field and Laboratory Method – The Permittees shall collect and analyze samples for Enterococci and *E. coli* in accordance with the most recent U.S. EPA protocols.²⁹
- (2) Sample Design/Locations – The Permittees shall collect one or more samples in a creek and at an area where water-contact recreation is likely or at an opportunistic location where there is potential to detect leaking sewerage infrastructure.
- (3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples in the dry season. Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	5 per year
Santa Clara Permittees	5 per year
Contra Costa Permittees	5 per year
San Mateo Permittees	5 per year
Fairfield-Suisun Permittees	3 per 5-year period
Vallejo Permittees	3 per 5-year period

- (4) Followup – If U.S. EPA’s statistical threshold value³⁰ for 36 per 1000 primary contact recreators is exceeded, the water body reach shall be identified as a candidate SSID project.

C.8.e. Stressor/Source Identification (SSID) Projects

When any monitoring result triggers a candidate for a SSID project followup as indicated within the provisions of C.8.d and C.8.g, the Permittees shall take the following actions, as also required by Provision C.1. If the trigger stressor or source is already known, the Permittee(s) shall take appropriate followup action to reduce the water quality stressor or source and count this action as a completed SSID Project.

SSID projects are intended to be oriented toward taking action(s) to alleviate stressors and reduce sources of pollutants; thus the Permittees shall attempt to

²⁹ U.S. EPA protocols available at http://water.epa.gov/scitech/methods/cwa/methods_index.cfm. Analytical methods listed here are also acceptable: http://water.epa.gov/grants_funding/beachgrants/chapter4.cfm

³⁰ U.S. EPA. 2012. *Recreational Water Quality Criteria*. Office of Water 820-F-12-058. Table 4.

complete all steps for half their required SSID projects, at a minimum, during the permit term.

- i. Review monitoring (C.8.d and C.8.g) results annually and maintain a list of all results exceeding thresholds described therein. Pollutant of Concern Monitoring (C.8.f) results may be included on the list as appropriate.
- ii. Select followup SSID projects from the list developed in C.8.e.i. based on criteria such as magnitude of threshold exceedance; parameter (for a variety of parameters); likelihood stormwater management action(s) could address the exceedance; and similar priorities.
 - (1) Permittees who conduct SSID projects through a regional collaborative shall collectively initiate a minimum of eight new SSID projects (minimum of one for toxicity) during the Permit term. Because these SSID projects are being conducted through a regional collaborative, all SSID project reports shall be presented in a unified, regional-level report when submitted to the Water Board. In the case that no sample exhibits toxicity, as defined within the method required in this section, during the permit term, a SSID project for toxicity is not required.
 - (2) If conducted through a countywide Stormwater Program, the Santa Clara and Alameda Permittees each shall be required to initiate five (minimum of one for toxicity) SSID projects; the Contra Costa and San Mateo Permittees each shall be required to initiate three SSID (one for toxicity) projects; and the Fairfield-Suisun and Vallejo Permittees each shall be required to initiate one SSID project(s) during the Permit term. In the case that no sample exhibits toxicity, as defined within the method required in this section, within a countywide program area during the permit term, a SSID project for toxicity is not required.
- iii. The Permittees shall conduct site specific SSID project(s) (or non-site specific if the problem is wide-spread) in the stepwise process described below:
 - (1) Step 1: The Permittees shall develop a work plan for each SSID project and submit the work plans with the Urban Creeks Monitoring Report (UCMR) such that a minimum of half the required number of SSID projects are started (at a minimum, have a workplan) by the third year of the permit term, with the goal of completing Step 2, at a minimum, for half the required SSID projects within the permit term. The work plan shall:
 - (a) Define the problem (e.g., magnitude and temporal and geographic extent) to the extent known;
 - (b) Describe the SSID project objectives, including the management context within which the results of the investigation will be used;
 - (c) Consider the problem within a watershed context and look at multiple types of related indicators, where possible (e.g., basic water quality data and biological assessment results);

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- (d) List candidate causes of the problem (e.g., biological stressors, pollutant sources, and physical stressors);
 - (e) Establish a schedule for investigating the cause(s) of the trigger stressor/source to begin upon completion of the workplan. Investigations may include evaluation of existing data, desktop analyses of land uses and management actions, and/or collection of new data.
 - (f) Conduct a site specific study (or non-site specific if the problem is wide-spread) in a stepwise process to identify and isolate the cause(s) of the trigger stressor/source. This study should follow guidance for Toxicity Reduction Evaluations (TRE) or Toxicity Identification Evaluations (TIE)¹⁸. A TRE, as adapted for urban stormwater, allows Permittees to use other sources of information (such as industrial facility stormwater monitoring reports) in attempting to determine the trigger cause, potentially eliminating the need for a TIE. If a TRE does not result in identification of the stressor/source, Permittees shall conduct a TIE. For toxicity studies where there is no chemical pollutant associated with the creek status monitoring sample exhibiting toxicity, a TIE should be conducted. Where chemical data indicate a pollutant, such as fipronil or a pyrethroid, is present at adverse effects levels in the sample location, it is not necessary to conduct a TIE, and the SSID project would be considered complete;
 - (g) For physical habitat, physiochemical pollutants (dissolved oxygen, pH, conductivity, temperature), nutrients, metals, and other stressors, the investigation shall generally follow Step 5 (Identify Probably Causes) of the Causal Analysis/Diagnosis Decision Information System (CADDIS);³¹
 - (h) For pathogen indicators, the study shall generally follow the California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (2013) or equivalent process or method;³² and
 - (i) The Permittees may modify the SSID Work Plan in subsequent years of the Permit term in order to address new Creek Status (or POC) results that exceed applicable thresholds and are of a higher priority based on the criteria in C.8.e.ii.
- (2) Step 2: The Permittees shall conduct SSID investigations according to the schedule in each SSID project work plan and shall report on the status of SSID investigations annually in the UCMR. Local stormwater Permittees shall be advised of the SSID project and consulted regarding

³¹ http://www.epa.gov/caddis/si_step5_overview.html

³² http://www.swrcb.ca.gov/water_issues/programs/beaches/cbi_projects/docs/sipp_manual.pdf

possible local sources and potential management actions during the work plan phase and periodically throughout the SSID project.

(3) Step 3: Follow-up actions.

- (a) When a Permittee(s) determines that discharges to its stormwater collection system(s) contribute to an exceedance of a water quality standard or an exceedance of a trigger threshold such that the water body's beneficial uses are not supported, the Permittee(s) shall submit a report in the UCMR that describes BMPs that are currently being implemented, and the current level of implementation, and additional BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of WQS. The report shall include an implementation schedule.
- (b) If a Permittee(s) determines that discharges from its (their) stormwater collection system(s) are not contributing to an exceedance of a water quality standard, the Permittee(s) may end the SSID project. The Executive Officer must concur in writing before an SSID project is determined to be completed.

In cases where SSID investigations prove inconclusive (e.g., the trigger threshold exceedance is episodic or reasonable methods do not reveal a stressor/source), the Permittee(s) may request that the Executive Officer consider the SSID project complete.

- (c) Reporting: The Permittees shall submit an SSID status report in each UCMR which summarizes the actions taken in C.8.e.i-iii above. The SSID status report shall include a running summary of all SSID projects (C.8.e.ii), including start date, brief problem definition, and schedule for each project. As projects progress, the SSID report shall describe findings and monitoring results and outline steps for the upcoming year for each ongoing project. The Permittees shall submit the SSID status report with each UCMR.
- iv. As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed to do so by the Water Board.

C.8.f. Pollutants of Concern Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of POCs to the Bay from local tributaries and urban runoff, provide information to support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.

In particular, monitoring required by this provision must be directed toward addressing the following five priority POC management information needs:

1. **Source Identification** - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
2. **Contributions to Bay Impairment** - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
3. **Management Action Effectiveness** - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;
4. **Loads and Status** - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and
5. **Trends** - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.

Not all information needs apply to all POCs (see Table 8.2 below for details).

- i. **Sampling Methods** – The Permittees shall implement or cause to be implemented the monitoring components shown in Table 8.1 in order to address each of the five POC management information needs.

Table 8.1 POC Monitoring Methods

Monitoring Type	Information Need	Monitoring Methods
1	Identify Source Areas	<p>Monitoring methods to identify watershed sources of POCs should include:</p> <ul style="list-style-type: none"> • Collection and analysis of POCs on sediments in urban stormwater runoff that are transported through MS4s or receiving waters during stormwater runoff events; or • Collection and analysis of POCs on bedded sediments deposited in MS4s or receiving waters; or • Collection and analysis of POCs in stormwater runoff or bedded sediments on source area properties (e.g. private property); or, • Other monitoring methods designed to identify specific sources or uses of POCs (e.g., caulk in roadways or building materials) or watershed source areas.
2	Identify watershed areas contributing most to Bay impairment	<p>Monitoring methods to identify watershed areas contributing most to Bay impairment should include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1; or • Collection of small fish tissue (or equivalent indicator) near tributary confluences with the Bay and analysis for POCs; or • Collection of bedded sediments near tributary confluences with the Bay and analysis for POCs.
3	Provide support for future or existing management actions	<p>Monitoring methods to support future or existing management actions should include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, with a focus on monitoring the effectiveness of specific management actions in reducing or avoiding POCs in MS4 discharges.
4	Provide information on POC loads, concentrations, or presence / absence	<p>Monitoring methods to provide information on POC loads, concentrations or presence/absence should include:</p> <ul style="list-style-type: none"> • Methods described for Monitoring Type #1, in combination with quantitative modeling associated with quantifying POC loads from MS4s or small tributaries to the Bay.
5	Evaluate POC trends	<p>Monitoring methods to provide information on trends in POC loads and concentrations overtime may include: Methods described for Monitoring Type #1 or #2.</p>

ii. Parameters and Monitoring Frequency – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in Table 8.2. Monitoring frequencies are described as the total and minimum number of samples that Permittees within a countywide Stormwater Program shall collectively collect and analyze in a Water Year (October 1 – September 30). Minimum number of samples that Permittees within a countywide Stormwater Program shall collect by the end of the Permit term to address each monitoring type are also specified.

Table 8.2 POC Monitoring Parameters, Effort and Type

Pollutant of Concern	Total Samples^a Collected /Analyzed (yearly minimum) for each Countywide Program: Alameda, Contra Costa, Santa Clara, and San Mateo	Minimum Number of Samples for each Monitoring Type^b
Polychlorinated Biphenyls (PCBs)	80 (8)	8 samples minimum for monitoring types 1-5
Total Mercury	80 (8)	8 samples minimum for monitoring types 1-5
Copper	20 (2)	4 samples minimum for monitoring types 4-5
Emerging Contaminants^c: Must include but not limited to: Perfluorooctane Sulfonates (PFOS, in sediment) Perfluoroalkyl sulfonates (PFAS, in sediment) Alternative flame retardants	See footnote c	See footnote c
Ancillary Parameters^d: Total organic carbon Suspended sediments (SSC) Hardness	as necessary to address management questions for other POCs – see footnote d	
Nutrients: Ammonium, Nitrate, Nitrite, Total Kjeldahl Nitrogen, Orthophosphate, Total Phosphorus (all nutrients collected together for each sample)	20 (2) for each nutrient species	20 samples for monitoring type 4 for each nutrient species.

^a This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.1), that must be collected during the permit term. The number in parentheses indicates the minimum number of samples that must be collected, across all applicable monitoring types, during each of the five years of the permit. For example, 80 total samples must be collected for both total PCBs and mercury by each set of Santa Clara County, San Mateo County, Alameda County, and Contra Costa County Permittees during the term of the permit. Permittees must collect a minimum of 8 PCBs samples every year of the permit term, including the final year.

^b This column indicates the monitoring types from Table 8.1 that are applicable to this POC along with the minimum number of samples that shall be collected by each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) by the end of year four of the permit. The applicable monitoring type(s) is also stated to illustrate the management information need(s) motivating the collected data. For example, each set of Permittees (i.e., the Countywide Programs for Santa Clara, San Mateo, Alameda, and Contra Costa counties) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.1 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

^c The Permittees shall conduct or cause to be conducted a special study that addresses relevant management information needs for emerging contaminants. The special study must account for relevant CECs in stormwater and would address at least PFOS, PFAS, and alternative flame retardants being used to replace PBDEs.

^d Total Organic Carbon (TOC) data are not used independently. Rather, TOC can be useful for normalizing PCBs data collected in water and sediment. TOC shall be collected concurrently with PCBs data that should be normalized to TOC. Similarly, suspended sediment concentrations (SSC) samples should be collected and analyzed when water samples are collected that will be used to assess loads, loading trends, or BMP effectiveness for PCBs and Mercury. Hardness data are used in conjunction with copper concentrations collected in fresh water.

iii. POC Parameters and Analytical Methods – Samples collected consistent with Table 8.2 shall be analyzed for parameters listed in Table 8.3. Where no laboratory method is listed in Table 8.3, Permittees shall use U.S. EPA or SWAMP-approved methods.

Table 8.3 POC Analytes and Analytical Methods

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs	U.S. EPA 1668 (RMP 40)
		Total Organic Carbon	
		Suspended sediments (SSC)	
	Bedded Sediment	Total PCBs	As appropriate to address the management information need: U.S. EPA 1668 (RMP 40), 8082A, or 8270D modified by Method 1625
Total organic carbon			
Mercury	Water	Total Mercury	
	Bedded Sediment	Total Mercury	
Copper	Water	Total Copper	
		Dissolved Copper	
		Hardness	
Nutrients	Water	Ammonium	
		Nitrate	
		Nitrite	
		Total Kjeldahl Nitrogen	
		Orthophosphate	
		Total Phosphorus	

C.8.g. Pesticides and Toxicity Monitoring

The Permittees shall conduct wet weather and dry weather monitoring of pesticides and toxicity in urban creeks. If a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the Permit term, Permittees may request the Executive Officer modify, reduce or eliminate this monitoring requirement, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

i. Toxicity in Water Column - Dry Weather

- (1) Field and Laboratory Method – The Permittees shall collect grab samples of receiving water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed, and by the methods described, on Table 8.4.

Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.³³ Each sample shall be subject to determination of “Pass” or “Fail” and shall indicate “Percent Effect” from toxicity using nondiluted samples. The TST null hypothesis shall be “mean sample response $\leq 0.75 \times$ mean control response.” A test result that rejects this null hypothesis shall be reported as “Pass.” A test result that does not reject this null hypothesis shall be reported as “Fail.” The relative “Percent Effect” of the sample is defined and reported as: $((\text{Mean control response} - \text{Mean sample response}) \div \text{Mean control response}) \times 100$.

Table 8.4 Water Column Aquatic Toxicity Analytical Procedures

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
<i>Pimephales promelas</i> (Fathead Minnow)	Larval Survival and Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 ³⁴ EPA 833-R-10-003 ³⁵
<i>Ceriodaphnia dubia</i> (Freshwater Crustacean)	Survival ^a	Pass or Fail, % Effect <25% Passes, >25% Fails	EPA-821-R-02-013 EPA 833-R-10-003
<i>Ceriodaphnia dubia</i> (Freshwater Crustacean)	Reproduction	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
<i>Selenastrum capricornutum</i> (Green Algae)	Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
<i>Hyalella azteca</i> (Freshwater Amphipod)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 ³⁶ EPA 833-R-10-003
<i>Chironomus dilutus</i> (midge)	Survival	Pass or Fail using TST, % Effect ^b	EPA-821-R-02-012 EPA 833-R-10-003

³³ National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.

³⁴ *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.

³⁵ *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003) 2010.

³⁶ *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H. azteca* and *C. dilutus* methods.

^aThe *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t-test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."

^b For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.

- (2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations where toxicity could be likely; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.
- (3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples annually in the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second water year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

ii. Toxicity, Pesticides and Other Pollutants in Sediment - Dry Weather

- (1) Field and Laboratory Method – The Permittees shall collect grab samples of creek sediment using applicable SWAMP comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.5. Where no laboratory method is listed in Table 8.5, Permittees shall use U.S. EPA or SWAMP-approved methods.

Table 8.5 Sediment Toxicity & Pollutants Analytical Procedures

Test Species or Pollutant	Units	Laboratory Method
<i>Hyalella azteca</i> and <i>Chironomus dilutus</i> survival ^a	Pass/Fail using TST, % Effect ^a	EPA-600/R-99-064 ³⁷
Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin		EPA 3540C followed by EPA 8270D by NCI-GCMS
Carbaryl		
Fipronil		
Total PAHs		
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc		
Total organic carbon		
Grain size		

³⁷ *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA 600/R-99-064). Second Edition. March 2000.

^a For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

- (2) **Sample Design/Locations** – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.
- (3) **Frequency, Timeframe, and Number of Sites** – The Permittees shall collect samples annually during the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second year of the permit term. Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

iii. **Wet Weather Pesticides and Toxicity Monitoring**

- (1) **Field and Laboratory Method** – The Permittees shall collect water column samples and analyze them for the following parameters using the methods specified in Tables 8.4 and 8.5. For imidacloprid, Permittees shall specify an analytical method that achieves a reporting level as close to 0.05 ppb as possible, but in no case exceeds 0.1 ppb.
 - Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
 - Imidacloprid
 - Indoxacarb³⁸
 - Fipronil
 - Toxicity
- (2) **Sample Design/Locations** – The Permittees shall collect samples annually during storm events. Sample locations shall be representative of urban watersheds (i.e., bottom of watershed locations).
- (3) **Frequency, Timeframe, and Number of Sites** – If this (C.8.g.iii) sampling is conducted by the RMC on behalf of all Permittees, a total of ten (10) samples shall be collected over the Permit term, with a minimum of six (6) samples collected by the end of the third water year of the permit term. If this (C.8.g.iii)

³⁸ Indoxacarb shall be a required analyte in the water year following notification by the Executive Officer that an analytical method with appropriate quality assurance and sensitivity is available. At the time of Permit issuance, an analytical method has not been developed.

sampling is conducted by Countywide Stormwater Programs, Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	1 per year
Santa Clara Permittees	1 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

- iv. **Followup** – The Permittees shall identify a site as a candidate SSID project when analytical results indicate any of the following:
- (1) A toxicity test of growth, reproduction, or survival of any test organism is reported as “fail” in both the initial sampling and a second, followup sampling, and both have $\geq 50\%$ Percent Effect;
 - (2) A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan;
 - (3) For pollutants without WQOs, results exceed Probable Effects Concentrations or Threshold Effects Concentrations.³⁹

C.8.h. Reporting

- i. **Water Quality Standard Exceedence** – When data collected pursuant to C.8.a.- C.8.g. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a followup report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.9 through C.14 of this Order, consistent with Provision C.1.
- ii. **Electronic Reporting** – The Permittees shall submit to the California Environmental Data Exchange Network (CEDEN) all results from monitoring conducted pursuant to Provisions C.8.d. Creek Status, C.8.e. SSID Projects (as applicable), C.8.f. Pollutants of Concern and C.8.g. Pesticides and Toxicity. Data that CEDEN cannot accept are exempt from this requirement.
 - (1) Data shall be submitted in SWAMP formats and with the quality controls required by CEDEN.

³⁹ TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31. More recent TECs and PECs may be used if lower than stated in MacDonald 2000.

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- (2) Data collected during the previous October 1–September 30 period shall be submitted by March 31 of each year.

iii. Urban Creeks Monitoring Report – The Permittees shall submit a comprehensive Urban Creeks Monitoring Report no later than March 31 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Each Urban Creeks Monitoring Report shall contain summaries of Creek Status, SSID Projects, and Pollutants of Concern Monitoring including, as appropriate, the following:

- (1) Immediately following the Table of Contents, a completed Water Year Summary Table that lists each Program’s monitoring sites, with a row for each site. The table columns contain: Site ID; creek name; land use; latitude; longitude; bioassessment, nutrient; chlorine; water column toxicity; sediment toxicity and chemistry; pathogens; temperature loggers; and general water quality (sonde data). For each site, list the site information and check the parameters sampled at that site. This will provide a summary of all Creek Status Monitoring conducted that water year.
- (2) An SSID status report pursuant to Provision 0.
- (3) For all data, a statement of the data quality.
- (4) An analysis of the data, which shall include the following:
 - (a) Identification and analysis of any trends in stormwater or receiving water quality which shall include:
 - Calculations of CSCI scores and physical habitat endpoints;
 - Comparison of CSCI scores to:
 - Each other;
 - Any applicable, available reference site(s); and
 - Physical habitat endpoints.
 - (b) A discussion of the data for each monitoring program component, which shall:
 - Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, or the California Toxics Rule or other applicable water quality control plans;
 - Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - Identify and prioritize water quality problems;
 - Identify potential sources of water quality problems;
 - Describe followup actions;
 - Evaluate the effectiveness of existing control measures; and
 - Identify management actions needed to address water quality problems.

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- iv. Pollutants of Concern Monitoring Reports** – By October 15 of each year of the permit (beginning in 2016), the Permittees shall submit a report describing the allocation of sampling effort for POC monitoring for the forthcoming year (i.e., the water year that began October 1 of that year) and what was accomplished for POC monitoring during the preceding water year. The report shall include (for preceding year and projected for forthcoming year): monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured. Any data not reportable to CEDEN should be included in the following Urban Creeks Monitoring Report due annually on March 31.
- v. Integrated Monitoring Report** – No later than March 31 of the fifth year of the Permit term, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Urban Creeks Monitoring Report. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit. The Integrated Monitoring Report shall report on all the data collected since the previous Integrated Monitoring Report and shall contain the following:
- (1) The Water Year Summary Table, as described in Provision C.8.g.iii, containing information pertaining to the fourth year monitoring data;
 - (2) A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report, and may include other pertinent studies;
 - (3) For POCs, the report shall include methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable; and
 - (4) The Integrated Monitoring Report shall include a budget summary for each monitoring requirement and recommendations for future monitoring.
- vi. Standard Report Content** – All monitoring reports shall include the following:
- (1) The purpose of the monitoring and briefly describe the study design rationale;
 - (2) Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data;
 - (3) Brief descriptions of sampling protocols and analytical methods;
 - (4) Sample location description, including water body name and segment and latitude and longitude coordinates;
 - (5) Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue);
 - (6) Concentrations detected, measurement units, and detection limits;
 - (7) Assessment, analysis, and interpretation of the data for each monitoring program component;
 - (8) A listing of volunteer and other non-Permittee entities whose data are included in the report; and
 - (9) Assessment of compliance with applicable water quality standards.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses, within their jurisdictions, their own and others' use of pesticides that pose a threat to water quality and that have the potential to enter the municipal conveyance system.

This provision implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide-related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. U.S. EPA phased out urban uses of diazinon in the mid-2000s, and diazinon is no longer detected in urban creeks in the region. Pesticide-related toxicity continues to occur, because State and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. In adopting the TMDL implementation plan, the Water Board recognized that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and State law; and (2) because a realistic date for achieving allocations cannot be discerned given the current framework for pesticide regulation, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Urban-use pesticides of concern to water quality include: diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); and carbamates (e.g., carbaryl and aldicarb).

C.9.a. Maintain and Implement an Integrated Pest Management (IPM) Policy or Ordinance and Standard Operating Procedures

All Permittees have developed a pesticide toxicity control program for use of pesticides in municipal operations and on municipal property based on the concepts of IPM⁴⁰ and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

⁴⁰ IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM techniques could include biological controls (e.g., ladybugs and other natural enemies or predators); physical or mechanical controls (e.g., hand labor or mowing, caulking entry points to buildings); cultural controls (e.g., mulching, alternative plant type selection, and enhanced cleaning and containment of food sources in buildings); and reduced risk chemical controls (e.g., soaps or oils).

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- i. **Task Description** – The Permittees shall implement their IPM policies or ordinances and standard operating procedures and update their IPM policies or ordinances and standard operating procedures as needed to ensure their use of pesticides do not cause or contribute to pesticide-caused toxicity in receiving waters.
 - ii. **Implementation** - Each Permittee shall require municipal employees and contractors to adhere to its IPM policy or ordinance and standard operating procedures in all the Permittee’s municipal operations and on all municipal property.
 - iii. **Reporting**
 - (1) In their Annual Reports, the Permittees shall certify they are implementing their IPM policy or ordinance and standard operating procedures, report trends in quantities and types of pesticide active ingredients used, and explain any increases in use of pesticides of concern to water quality as listed in the introduction section of this Provision. Trends and quantities of pesticide active ingredient usage shall be reported beginning with the September 2017 Annual Report.
 - (2) In their Annual Reports, the Permittees shall provide a brief description (e.g., one or two sentences) of two IPM tactics or strategies implemented in the reporting year. Examples could include non-chemical strategies such as monitoring, mowing weeds, mulching, and redesign of problematic landscapes; preventive actions such as sealing holes and gaps in structures, improving sanitation, and outreach to employees about how their actions contribute to pest presence; and examples of integration of several strategies into a cohesive whole, such as tackling a rat problem by educating building occupants, improving sanitation, trimming trees away from buildings, sealing holes in the structure, and trapping rodents. To the extent possible, different IPM actions should be described each year, so that a range of IPM actions is described over the permit term.
 - (3) IPM policies or ordinances and IPM standard operating procedures shall be submitted to the Water Board upon request.

C.9.b. Train Municipal Employees

- i. **Task Description**– The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee’s IPM policy or ordinance and standard operating procedures. This training may also include other training opportunities such as Bay-Friendly Landscape Maintenance Training & Qualification Program, provided both structural and landscape pest control training are provided.
- ii. **Reporting**
 - (1) In their Annual Reports, the Permittees shall report the percentage of municipal employees who apply pesticides who have received training in their IPM policy or ordinance and IPM standard operating procedures

within the last year. This report shall briefly describe the nature of the training, such as tailgate training provided by a Permittee's IPM coordinator, IPM training through the Pesticide Applicators Professional Association, etc.

- (2) The Permittees shall submit training materials (e.g., course outline, date, and list of attendees) upon request.

C.9.c. Require Contractors to Implement IPM

- i. Task Description** – The Permittees shall hire IPM-certified contractors or include contract specifications requiring contractors to implement IPM, so that all contractors practice IPM on municipal properties. The Permittees shall observe contractor pesticide applications to verify that contractors implement their contract specifications in accordance with the Permittee's IPM policies or ordinance and standard operating procedures. Permittees shall note that contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation. Similarly, IPM certifications awarded to a pest control company may not guarantee an individual employee will always use IPM strategies. Thus, periodic Permittee observation of contractor performance is necessary.
- ii. Implementation** – Permittees shall periodically monitor their contractors' activities to verify full implementation of IPM techniques. This shall include, at a minimum, evaluation of lists of pesticides and amounts of active ingredient used.
- iii. Reporting** – In their Annual Reports, the Permittees shall state how they verified contractor compliance with IPM policies and any actions taken or needed to correct contractor performance.

C.9.d. Interface with County Agricultural Commissioners

- i. Task Description** – The Permittees shall maintain communications with county agricultural commissioners to (a) get input and assistance on urban pest management practices and use of pesticides, (b) inform them of water quality issues related to pesticides, and (c) report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire (http://www.cdpr.ca.gov/docs/legbills/rulepkgs/11-004/text_final.pdf).
- ii. Reporting** – In their Annual Reports, the Permittees shall briefly describe the communications they have had with county agricultural commissioners and report followup actions to correct violations of pesticide regulations.

C.9.e. Public Outreach

- i. **Task Description** – Permittees shall undertake outreach programs to (a) encourage communities within the Permittee’s jurisdiction to reduce their reliance on pesticides that threaten water quality; (b) encourage public and private landscape irrigation management that minimizes pesticide runoff; and (c) promote appropriate disposal of unused pesticides.
- ii. **Implementation** – The Permittees shall conduct each of the following:
 - (1) **Point of Purchase Outreach:** The Permittees shall:
 - Conduct outreach to consumers at the point of purchase;
 - Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
 - Participate in and provide resources for the “Our Water, Our World” program or a functionally-equivalent pesticide use reduction outreach program.
 - (2) **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).
 - (3) **Outreach to Pest Control Professionals:** The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by Ecowise Certified or a functionally-equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BASMAA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.
- iii. **Reporting** – In each Annual Report, Permittees shall describe their actions taken in the three outreach categories above. Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted in each of the three categories, including level of effort, messages and target audience. (The effectiveness of outreach efforts shall be evaluated only once in the Permit term, as required in Provision C.9.f.).

C.9.f. Track and Participate in Relevant Regulatory Processes

- i. Task Description** – The Permittees shall conduct the following activities, which may be done at a county, regional, or state wide level:
 - (1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
 - (2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
 - (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with WQS; and
 - (4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.
- ii. Reporting** – In their Annual Reports, the Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or state wide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged.

C.9.g. Evaluate Implementation of Pesticide Source Control Actions

- i. Task Description** – This task is necessary to gauge how effective the implementation actions taken by Permittees are in (a) achieving TMDL targets and (b) avoiding future pesticide-related toxicity in urban creeks. Once during the permit term, Permittees shall conduct a thoughtful evaluation of their IPM efforts, how effective these efforts appear to be, and how they could be improved.
- ii. Implementation** – The Permittees shall evaluate the effectiveness of the pesticide control measures implemented by their staff and contractors, evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies), and identify additions and/or improvements to existing control measures needed to attain targets, with an implementation time schedule.
- iii. Reporting** – In their 2019 Annual Reports, the Permittees shall submit this evaluation, which shall include an assessment of the effectiveness of their IPM efforts required in Provisions C.9.a-e and g; a discussion of any improvements

made in these efforts in the preceding five years; and any changes in water quality regarding pesticide toxicity in urban creeks. This evaluation shall also include a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term. Work conducted at the county or regional level shall be evaluated at that respective level; reiteration in individual Permittee evaluation reports is discouraged.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.1, for trash discharges, Discharge Prohibition A.2, and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems in accordance with the requirements of this provision. Flood management agencies are not subject to these trash reduction requirements except for continued implementation of requirements for trash full capture systems and Trash Hot Spot cleanups, as specified in subsections C.10.b.i and C.10.c.

C.10.a. Trash Reduction Requirements

Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.

i. Schedule – Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

- a. 70 percent by July 1, 2017; and
- b. 80 percent by July 1, 2019.

In addition, Permittees should achieve 60 percent reduction by July 1, 2016. This is not a mandatory deadline; rather, it shall be used as a performance guideline to meet the mandatory July 1, 2017 deadline. Permittees that do not attain the 60 percent performance guideline shall submit documentation of a plan and schedule of implementation of additional trash load reduction control actions that will attain the July 1, 2017 deadline.

ii. Trash Generation Area Management – Permittees shall demonstrate attainment of the C.10.a.i trash discharges percentage-reduction requirements by management of mapped trash generation areas within their jurisdictions delineated on Trash Generation Area Maps included with their Long Term Trash Reduction Plans, submitted in February 2014, in accordance with the requirements and accounting set forth in this provision. The February 2014 maps provide the 2009 trash levels and delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories

- Low = less than 5 gal/acre/yr;
- Moderate = 5-10 gal/acre/yr;
- High = 10-50 gal/acre/yr; and
- Very High = greater than 50 gal/acre/yr.

Permittees also designated trash management areas on their February 2014 maps encompassing one or more trash generation areas, within which they will implement trash control actions. Permittees shall have an opportunity to correct and/or revise, based on improved information, the 2009 trash levels and trash generation areas in their February 2014 maps by submitting the correction and/or revision no later than the 2016 Annual Report deadline.

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- a. Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better. Actions equivalent to full trash capture means actions that send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows. The C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation by the C.10.a.i mandatory deadlines.
- b. Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of the latter shall be assessed with visual assessments in accordance with C.10.b.ii. If there is a full trash capture device downstream of these lands, no other trash control is required. Permittees shall map the location, or otherwise record the location, of all such lands greater than 10,000 ft² that are plumbed directly to their storm drain systems by July 1, 2018, including the trash control status of these areas. This information shall be retained by the Permittees for inspection upon request.
- iii. **Mandatory Minimum Full Trash Capture Systems** - Permittees shall install and maintain a mandatory minimum number of full trash capture devices, to treat runoff from an area equivalent to 30 percent of retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains to the storm drain system within their jurisdictions. A city Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2,000, is exempt from this full trash capture requirement. Table 2 in Attachment E contains the minimum amount of drainage areas that must be treated with full trash capture devices by each city or county Permittee, and the minimum number of trash capture devices required to be installed and maintained by flood management agency Permittees.

A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the sub-drainage area or designed to carry at least the same flow as the storm drain connected to the inlet. The device(s) must also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events. Types of systems certified by the State Water Resources Control Board are deemed full capture systems. A stormwater treatment facility implemented in accordance with Provision C.3 is also deemed a full capture system if the facility, including its maintenance prevents the discharge of trash to the downstream MS4 and receiving waters

and discharge points from the facility, including overflows, are appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one year, one hour storm hydraulic specification (C.10.a.iii.).

C.10.b. Demonstration of Trash Reduction Outcomes

- i. **Full Trash Capture Systems** – Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system.
 - a. **Maintenance** – The maintenance of each full capture device shall be adequate to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device’s trash reservoir causing bypassing of trash. All full trash capture devices shall be inspected and maintained at least once per year. All such devices in high or very high trash generation areas shall be inspected at least two times per year, with the inspections spaced at least three months or more apart. If this frequency of inspection is found excessive after two inspections, the inspection frequency can be reduced to once per year.
 - b. If any such device is found to have a plugged or blinded screen or is greater than 50 percent full of trash during a maintenance event, the maintenance frequency shall be increased so that the device is neither plugged nor more than half full of trash at the next maintenance event.
 - c. **Maintenance Records** – Permittees shall retain device specific maintenance records, including, at a minimum: the date(s) of maintenance, the capacity condition of the device at the time of maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report which may be limited to the number of full capture devices maintained that exhibited a plugged, full or overflowing condition upon maintenance.
 - d. **Certification** – Permittees shall certify annually that each of their full trash capture systems is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation area.
- ii. **Other Trash Management Actions** – Permittees shall maintain, and provide for inspection and review upon request, documentation of non-full trash capture system trash control actions that verifies implementation of each action. Permittees shall also conduct assessment of the action that verifies effectiveness of the action or combination of actions and maintain, and provide for inspection and review upon request, documentation of assessments.

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- a. **Implementation Documentation** – Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other information relevant to effective implementation of the action or combination of actions.
- b. **Visual Assessment of Outcomes of Other Trash Management Actions** – Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see C.10.b.ii.b.(iv.)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:
- (i) Conduct observations within a trash management area of the sidewalk, curb and gutter, or locations associated with trash generation sources.
 - (ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles; or conduct observations at strategic locations with justification they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.
 - (iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of implementation of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.
 - (iv) Permittees may put forth substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Such a proposal shall be made to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within certain trash management areas to the same performance standard accepted by the Executive Officer.

iii. **Percentage Discharge Reduction** – Percentage discharge reduction from 2009 from Very High generation areas reduced to High, Moderate, and Low, High generation areas reduced to Moderate and Low, and Moderate trash generation areas reduced to Low trash generation category to meet the required total percent reduction (%Reduction) shall be calculated based on the following formula:

$$\% \text{ Reduction} = 100 [(12A_{VH(2009)} + 4A_{H(2009)} + A_{M(2009)}) - (12A_{VH} + 4A_H + A_M)] / (12A_{VH2009} + 4A_{H2009} + A_{M2009})$$

where:

- $A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area
- $A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area
- $A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area
- A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year
- A_H = total amount of high trash generation category jurisdictional area in the reporting year
- A_M = total amount of moderate trash generation category jurisdictional area in the reporting year
- 12 = Very High to Moderate weighing ratio
- 4 = High to Moderate weighing ratio
- 100 = fraction to percentage conversion factor

iv. **Source Control** – Permittee jurisdiction-wide actions to reduce trash at the source, particularly persistent trash items, may be valued toward trash load reduction compliance by up to ten percent load reduction total for all such actions. To claim a load percentage reduction value, Permittees must provide substantive and credible evidence that these actions reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides evidence that the implementation of source control in its jurisdiction is similarly implemented as the source control assessed in the reference studies.

v. **Receiving Water Monitoring** – Permittees shall conduct receiving water monitoring and develop receiving water monitoring tools and protocols and a monitoring program designed, to the extent possible, to answer the following questions:

- Have a Permittee’s trash control actions effectively prevented trash within a Permittee’s jurisdiction from discharging into receiving water(s)?
- Is trash present in receiving water(s), including transport from one receiving water to another, e.g., from a creek to a San Francisco Bay segment, at levels that may cause adverse water quality impacts?
- Are trash discharges from a Permittee’s jurisdiction causing or contributing to adverse trash impacts in receiving water(s)?
- Are there sources outside of a Permittee’s jurisdiction that are causing or contributing to adverse trash impacts in receiving water(s)?

The monitoring tools and protocols shall include direct measurements and/or observations of trash in receiving water(s), or in scenarios where direct measurements or observations are not feasible, surrogates for trash in receiving waters, such as measurement or observations of trash on stream banks or shorelines.

- a. **Development and Testing Plan** – Permittees shall submit a plan acceptable to the Executive Officer by July 1, 2017, to develop and test a proposed receiving water monitoring program that includes the following:
- (i) Description of the tools and protocols;
 - (ii) Description of discharge and receiving water scenarios, which will be considered, that accounts for the various receiving waters and watershed, community, and drainage characteristics within Permittees' jurisdictions that affect the discharge of trash and its fate and effect in receiving water(s);
 - (iii) Description of factors, in addition to those in C.10.b.v.a.(ii), that will be considered and evaluated to determine scenarios and spatial and temporal representativeness;
 - (iv) Identification of sites, representative of all the Permittees and discharge and receiving water scenarios, that will be monitored during this permit term;
 - (v) Development of a system to manage and access monitoring results;
 - (vi) Opportunity for input and participation by interested parties;
 - (vii) Scientific peer review of the tools and protocols and testing results; and
 - (viii) Schedule for development and testing; with monitoring at representative sites starting no later than October 2017.

If the Permittees conduct this work through an independent third party, approved by the Executive Officer, the Plan may be submitted by July 2018, with monitoring to begin no later than October 2018.

- b. **Report and Proposed Monitoring Program** – Permittees shall report progress in the 2018 Annual Report, and submit a preliminary report by July 1, 2019 and a final report by July 1, 2020 on the proposed trash receiving water monitoring program. The progress report is not required if the Permittees conduct this work through an independent third party, approved by the Executive Officer, that provides input and participation by interested parties and scientific peer review of the tools and protocols and testing results and proposed receiving monitoring program.

C.10.c. Trash Hot Spot Selection and Cleanup

Trash Hot Spots in receiving waters shall be cleaned annually to achieve the multiple benefits of abatement of impacts and to learn more about the sources and transport routes of trash loading.

- i. **Trash Hot Spot Cleanup and Definition** – The Permittees shall clean selected Trash Hot Spots to a level of “no visual impact” at least one time per year for the

term of the permit. Trash Hot Spots shall be sections of creek or shoreline significantly impacted by trash of at least 100 yards of creek length or 200 yards of shoreline length.

- ii. **Trash Hot Spot Selection** – Permittees shall maintain the same number of trash hot spots identified in the previous permit term, which are included in Attachment E. Permittees may select new trash hot spot locations if past locations are no longer trash hotspots or if other locations may better align with trash management areas.
- iii. **Trash Hot Spot Assessments** – The Permittees shall quantify the volume of material removed from each Trash Hot Spot cleanup and attempt to identify sources to the extent readily feasible. Documentation of the cleanup activity to be retained by the Permittee shall include the trash condition before and after cleanup of the entire hot spot using photo documentation with a minimum of one photo per 100 feet of hot spot length and the total volume of trash and litter removed from the hot spot. Permittees shall report the volume removed for the most recent five years of hot spot cleanup in each Annual Report, or if a new trash hot spot location is selected, Permittees shall report the volume removed for the years of cleanup of that hotspot.

C.10.d. Trash Load Reduction Plans

Each Permittee shall maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the C.10.a Trash Load Reduction requirements. A summary of any new revisions to the Plan shall be included in the Annual Report. The Plan shall describe trash load reduction control actions being implemented or planned and the trash generation areas or trash management areas where the actions are or will be implemented, including jurisdiction-wide actions, such as source control ordinances

The Plans may include actions to control sources outside of the Permittee's jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees who choose to implement such control actions may account for them towards meeting the C.10.a Trash Load Reduction requirements as long as they can demonstrate the controls will be sustained and they quantify the sustained load reduction benefit relative to control actions in the trash generation areas or trash management areas in their jurisdiction that drained to the affected receiving water.

C.10.e. Optional Trash Load Reduction Offset Opportunities

- i. **Additional Creek and Shoreline Cleanup** – A Permittee may offset part of its provision C.10.a trash load percent reduction requirement by conducting additional cleanup of creek and shoreline areas beyond trash hot spot cleanups required by C.10.c if the additional cleanup efforts are conducted at a frequency of at least twice per year and sufficient to demonstrate sustained improvement of the creek or shoreline area. The maximum offset that may be claimed is ten percent.

A Permittee may claim a load reduction offset of one percent for each total of trash volume removed from additional cleanups that is three and a third percent

for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, and ten percent for the 2019 mandatory trash load reduction deadline, of the Permittee's 2009 trash load volume estimates, based on its trash generation maps and average categorical trash generation rates (see C.10.a.ii), in accordance with the following formula:

$$1\% \text{ Reduction Offset (Volume)} = (12 A_{VH(2009)} + 4 A_{H(2009)} + A_{M(2009)}) OF$$

where:

- $A_{VH(2009)}$ = total amount of 2009 very high trash generation category jurisdictional area
- $A_{H(2009)}$ = total amount of 2009 high trash generation category jurisdictional area
- $A_{M(2009)}$ = total amount of 2009 moderate trash generation category jurisdictional area
- 12 = Very High to Moderate weighing ratio
- 4 = High to Moderate weighing ratio
- OF = offset factor equal to (7.5×0.033) for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.033 is the three to one offset ratio, or (7.5×0.1) for the 2019 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

ii. **Direct Trash Discharge Controls** – A Permittee may offset an additional part of its provision C.10.a trash load percent reduction requirement by implementing a comprehensive plan approved by the Executive Officer for control of direct discharges of trash to receiving waters from non-storm drain system sources. The maximum offset that may be claimed is fifteen percent using the C.10.e.i formula. The plan shall be submitted not later than February 1 of the first year in which the offset will be reported in the following Annual Report and shall include the following:

- a. description of sources of the directly discharged trash;
- b. description of control actions that will be implemented during the permit term to prevent or reduce direct discharge trash loads in a systematic and comprehensive manner;
- c. map of the affected receiving water area and associated watershed; and
- d. description of how effectiveness of controls will be assessed, including documentation of controls, quantification of trash volume controlled, and assessment of resulting improvements to receiving water conditions.

C.10.f. Reporting

Each Permittee shall provide the following in each Annual Report:

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- i. A summary of trash control actions within each trash management area, including the types of actions, levels of implementation, areal extent of implementation, and whether the actions are ongoing or new, including initiation date.
 - ii. Upon request by the Executive Officer, an updated trash generation area map or maps, which include trash management areas, including the locations and associated drainage areas and of full trash capture systems and other trash control actions, and the location of Trash Hot Spots, with highlight or other indication of any revisions or changes from the previous year map(s). These maps can be used to illustrate progress toward achieving the trash reduction requirements in C.10.a.i.
 - iii. Should a Permittee correct and/or revise its 2009 trash generation map submitted in February 2014, the corrected or revised 2009 trash generation map shall be submitted in the 2016 Annual Report, if the Permittee has not already submitted the corrected or revised map. Certification that each of its full trash capture systems is operated and maintained to meet full trash capture system requirements; a description of any systems that did not meet full trash capture system requirements (e.g., due to plugging or overflowing); and any corrective actions taken.
 - iv. An accounting of its non-full trash capture system trash control actions assessments by providing a summary description of assessments in each of its trash management areas, including the number and dates of observations.
 - v. An accounting of progress toward or attainment of C.10.a.i trash discharge reduction performance guidelines and mandatory deadlines using the C.10.a.ii trash generation area mapping methodology and formula.
 - a. If a Permittee cannot demonstrate attainment of the 2016 performance guideline, it shall submit a detailed plan and schedule of implementation of additional trash load reduction control actions that will attain the 2017 mandatory deadline.
 - b. If a Permittee cannot demonstrate attainment of the 2017 or 2019 mandatory trash load reduction deadline, it shall submit a report of non-compliance with the associated Annual Report, or in advance of the Annual Report, that describes actions to comply with the mandatory reduction deadline in a timely manner. The report shall include a plan and schedule for implementation of full trash capture systems sufficient to attain the required reduction. A Permittee may submit a plan and schedule for implementation of other trash management actions to attain the required reduction in an area where implementation of a full trash capture system is not feasible. In such cases, the report shall include identification of the area and documentation of the basis of the Permittee's determination that implementation of a full trash capture system is not feasible.
 - vi. In the 2018 Annual Report, progress on development and testing of the receiving water monitoring program.

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- vii.** The volume removed for the most recent five years of hot spot cleanup for each of its trash hot spots, or for the years of cleanup if a new trash hot spot location has been selected.
 - viii.** For Permittees claiming a C.10.e.i offset, based on additional cleanup of creek and shoreline areas, a summary description of the additional cleanup actions.
 - ix.** For Permittees claiming a C.10.e.ii offset, based on non-storm drain system trash controls, a summary description of control actions receiving water assessment results, quantification of trash volume controlled, and assessment of resulting improvements in receiving water condition, the claimed offset and documentation of information used in the C.10.e.i formula.

C.11. Mercury Controls

The Permittees shall implement the following control program for mercury. The Permittees shall perform the control measures (source control, treatment control, and pollution prevention strategies) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The aggregate, regionwide, urban runoff wasteload allocation from the San Francisco Bay mercury TMDL is 82 kg/yr. The TMDL implementation plan calls for attainment of the allocation by February 2028 and, as a way to measure progress, attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation. The Permittees may comply with any requirement of this provision through a collaborative effort.

C.11.a. Implement Control Measures to Achieve Mercury Load Reductions

- i. **Task Description** – Permittees shall implement mercury source and treatment control measures and pollution prevention strategies to reduce mercury loads throughout the area covered by this Permit (permit-area).
- ii. **Implementation level** – To comply with this provision element, Permittees shall:
 - (1) Identify the watersheds or portions of watersheds (management areas) in which mercury control measures are currently being implemented and those in which new control measures will be implemented during the term of this Permit (many or most may be the same watersheds as those identified for C.12.a.ii(1));
 - (2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area (may be the same as those identified for C.12.a.ii(2));
 - (3) Submit a schedule of control measure implementation; and
 - (4) Implement mercury source and treatment control measures and pollution prevention strategies and quantify mercury load reductions achieved by using the accounting methods established according to provision C.11.b.
- iii. **Reporting**
 - (1) The Permittees shall report by April 1, 2016, progress toward developing a list of the watersheds and management areas where mercury control measures are currently being implemented and those in which control measures will be implemented (C.11.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas.

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- (2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.11.a.ii(1)) along with the specific control measures (C.11.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas and an implementation schedule (C.11.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:
- a. The number, type, and locations and/or frequency (if applicable) of control measures;
 - b. The description, scope, and start date of pollution prevention measures;
 - c. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural BMPs or other relevant implementation milestones for structural and non-structural BMPs) and a schedule for milestone achievement; and
 - d. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.11.a.ii(2).
- (3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.11.a.iii(2) as necessary to account for new control measures implemented, but not described, in the 2016 Annual Report.

C.11.b. Assess Mercury Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury loads reduced through implementation of pollution prevention, source control, and treatment control measures, including mercury source control, stormwater treatment, green infrastructure, and other measures. The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by the Permittees in the January 2014 Integrated Monitoring Report. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each control measure implemented.

ii. Implementation Level – The Permittees shall adequately quantify the mercury load reductions achieved through implementing pollution prevention, source control, and treatment control efforts.

iii. Reporting

- (1) In their 2016 Annual Report the Permittees shall submit, for Executive Officer approval, the assessment methodology and data collection program required in C.11.b.i.
- (2) Beginning with the 2017 Annual Report, Permittees shall report annually the loads reduced using the default (from Fact Sheet) or alternative approved assessment methodology to demonstrate cumulative mercury load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.11.a.
- (3) In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess mercury load reductions in the subsequent permit.

C.11.c. Plan and Implement Green Infrastructure to reduce mercury loads

i. Task Description – Permittees shall implement green infrastructure projects during the term of the Permit to achieve the mercury load reductions performance criteria in Table 11.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and Fact Sheet) to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit-area.

ii. Implementation Level

- (1) The Permittees shall implement sufficient green infrastructure projects so that mercury loads are collectively reduced by 48 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall demonstrate achievement of these load reductions by using the accounting methods approved under provision C.11.b.iii(1). Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 11.1. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction is the proportion of county population in each municipality.

If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

Table 11.1 Mercury Load Reduction Performance Criteria via Green Infrastructure Implementation by County

County Permittees	Mercury Load Reduction (g/yr) by June 30, 2020, through green infrastructure
Alameda Permittees	15
Contra Costa Permittees	9
San Mateo Permittees	6
Santa Clara Permittees	16
Solano Permittees: Suisun City, Vallejo, Fairfield	2
Totals	48

- (2) Permittees shall prepare a reasonable assurance analysis of future mercury load reductions by doing the following:
 - a. Quantify the relationship between areal extent of green infrastructure implementation and mercury load reductions. This quantification should take into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.
 - b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040.
 - c. Estimate the amount of mercury load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040.

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- d. Quantitatively demonstrate that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects.
 - e. Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill C.11.c.ii(2)(a-d) have been validated through a peer review process.

iii. Reporting

- (1) The Permittees shall submit in their 2018 Annual Report, as part of reporting for C.11.b.iii(2), the quantitative relationship between green infrastructure implementation and mercury load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.
- (2) The Permittees shall submit in their 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (3) The Permittees shall submit in their 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.
- (4) The Permittees shall submit as part of reporting for C.11.b.iii(2), beginning with their 2019 Annual Report, an estimate of the amount of mercury load reductions resulting from green infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (5) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the population-based default described in C.11.c.ii(1)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

C.11.d. Prepare Implementation Plan and Schedule to Achieve TMDL Allocations

- i. **Task Description** – Permittees shall prepare a plan and schedule for mercury control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028. This plan may share many elements of a similar plan developed for PCBs according to Provision C.12.d.

ii. Implementation level – Permittees shall prepare a mercury control measure implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in mercury load reductions sufficient to attain the mercury TMDL wasteload allocations by 2028. The plan must:

- (1) Identify all technically and economically feasible mercury control measures (including green infrastructure projects) to be implemented;
- (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
- (3) Provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

iii. Reporting

Permittees shall submit the plan and schedule in the 2020 Annual Report.

C.11.e. Implement a Risk Reduction Program

i. Task Description – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of mercury in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

ii. Implementation Level

- (1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.
- (2) In year four of the permit term, Permittees shall evaluate the effectiveness of their risk reduction program.

iii. Reporting – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2020 Annual Report.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. The Permittees shall implement PCBs control measures (source control, treatment control, and pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the PCBs TMDL. Permittees shall reduce PCBs loads by a specified amount during the term of the Permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan. The allocation, on an aggregate and regionwide basis, is 2 kg/yr (1.6 kg/yr allocated to Permittees) to be achieved by March 2030. This wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003. The Permittees may comply with any requirement of this Provision through a collaborative effort.

C.12.a. Implement Control Measures to Achieve PCBs Load Reductions.

- i. Task Description** – Permittees shall implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in Table 12.1 throughout the area covered by this Permit (permit-area).
- ii. Implementation level** –To comply with this provision element, Permittees shall:
 - (1) Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit;
 - (2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area;
 - (3) Submit a schedule of control measure implementation; and
 - (4) Implement sufficient control measures to achieve the permit-area-wide reduction stated below or the county-specific load reduction performance criteria shown in Table 12.1. The Permittees shall demonstrate achievement of these load reductions as required in provision C.12.b. Load reductions from control measures implemented prior to the effective date of this Permit may be counted toward the required reductions of this Permit term if these control measures were established or implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term (e.g., they were implemented after the 2014 Integrated Monitoring Report was submitted).

For all Permittees combined, these county-specific average annual PCBs load reduction performance criteria shall total 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. The June 30, 2020, deadline shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. The Fact Sheet describes the amount of PCBs load reduction benefit associated with implementing a number of control measures.

The Permittees may meet the load reductions as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.1. If neither the permit-area-wide total load reduction criteria nor the county-specific load reduction criterion is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction performance criteria is the proportion of county population in each municipality.

If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

Table 12.1 PCBs Load Reductions Performance Criteria by County

County	PCBs load reduction (g/yr) by June 30, 2018	PCBs Load Reduction (g/yr) by June 30, 2020
Alameda Permittees	160	940
Contra Costa Permittees	90	560
San Mateo Permittees	60	370
Santa Clara Permittees	160	940
Solano Permittees: Suisun City, Vallejo, Fairfield	30	190
Totals	500	3000

iii. Reporting

- (1) The Permittees shall report by April 1, 2016, progress toward developing a list of the watersheds and management areas where PCBs control measures are currently being implemented and those in which control measures will be implemented (C.12.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas. This list should include watersheds containing contaminated sites referred to the Water Board as well.
- (2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.12.a.ii(1)) along with the specific control measures (C.12.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas

and an implementation schedule (C.12.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:

- a. The number, type, and locations and/or frequency (if applicable) of control measures;
 - b. A cumulative listing of all potentially PCB-contaminated sites Permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information;
 - c. The description, scope, and start date, of PCBs control measures;
 - d. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement; and
 - e. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.12.a.ii(2).
- (3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.12.a.iii(2) as necessary to account for new control measures implemented but not described in the 2016 Annual Report.
- (4) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the default described in C.12.a.ii(4)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

C.12.b. Assess PCBs Load Reductions from Stormwater

- i. **Task Description** – The Permittees shall develop, document, and implement an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures, including PCBs source control, stormwater treatment, green infrastructure and other measures. The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each unit of activity.

- ii. **Implementation Level** – The Permittees shall adequately quantify the PCBs load reductions achieved through all the pollution prevention, source control, and

treatment control measures Permittees will implement in this Permit term, except for measures to manage PCB-containing materials and wastes during building demolitions (C.12.f).

For this Permit term, the Permittees will receive a total of 2000 g/yr (2 kg/yr) PCBs load reduction value if they have developed and implemented effective protocols for managing PCB-containing materials during demolition so that PCBs do not drain into the MS4 as required in provision C.12.f. The 2000 g/yr PCBs load reduction value shall be in furtherance of meeting the June 30, 2020, 3000 g/yr requirement in Table 12.1.

The Permittee-specific portion of the 2000 g/yr PCBs load reduction value shall be based on the proportion of county population in each municipality. If all the Permittees in a county wish to use an alternative method of distributing the county load reductions for managing PCB-containing materials during demolition, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2019 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

iii. Reporting

- (1) In their 2016 Annual Report the Permittees shall submit for approval by the Executive Officer the assessment methodology and data collection program required in C.12.b.i. and described in C.12.b.ii.
- (2) Beginning with the 2017 Annual Report, Permittees shall report annually the loads reduced using the default (from the Fact Sheet) or alternative approved assessment methodology to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.12.a.
- (3) In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions in the subsequent Permit.
- (4) All Permittees in a county may submit, in the 2019 Annual Report, an alternative (different from the default population-based method) and supporting information to derive Permittee-specific shares of load reduction value associated with implementation of C.12.f.

C.12.c. Plan and Implement Green Infrastructure to reduce PCBs loads

- i. Task Description** – Permittees shall implement green infrastructure projects during the term of the Permit to achieve PCBs load reduction performance criteria in Table

12.2 in furtherance of meeting the 3000 g/year load reduction criteria required in C.12.a.ii.(4) and Table 12.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and the Fact Sheet) to demonstrate quantitatively that PCBs load reductions of at least 3 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit-area.

Table 12.2 PCBs Load Reduction Performance Criteria via Green Infrastructure Implementation by County

County Permittees	PCBs Load Reduction (g/yr) by June 30, 2020, through green infrastructure
Alameda Permittees	37
Contra Costa Permittees	23
San Mateo Permittees	15
Santa Clara Permittees	37
Solano Permittees: Suisun City, Vallejo, Fairfield	8
Totals	120

ii. Implementation Level

- (1) The Permittees shall implement green infrastructure projects so that PCBs loads are collectively reduced by 120 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall demonstrate achievement of these load reductions by using the accounting methods approved under provision C.12.b.iii(1). Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.2. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total under provision C.12.a.ii(4).

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- (2) Permittees shall prepare a reasonable assurance analysis that demonstrates how green infrastructure will be implemented in order to achieve a PCBs load reduction of 3 kg/yr across the permit-area by 2040. This analysis shall include the following:
 - a. Quantify the relationship between areal extent of green infrastructure implementation and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies;
 - b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040;
 - c. Estimate the amount of PCBs load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040;
 - d. Quantitatively demonstrate that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects; and
 - e. Ensure that the calculation methods, models, model inputs and modeling assumptions used to fulfill C.12.c.ii(2)a-d have been validated through a peer review process.

iii. Reporting

- (1) The Permittees shall submit in their 2018 Annual Report, as part of reporting for C.12.b.iii(3), the quantitative relationship between green infrastructure implementation and PCBs load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.
- (2) The Permittees shall submit in their 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.
- (3) The Permittees shall submit in their 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.
- (4) The Permittees shall submit as part of reporting for C.12.b.iii(4), beginning with their 2019 Annual Report an estimate of the amount of PCBs load reductions resulting from green infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

- i. Task Description** – Permittees shall prepare a plan and schedule for PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.
- ii. Implementation level** – Permittees shall prepare a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. The plan must:
 - (1) Identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects); and
 - (2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and
 - (3) Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

iii. Reporting

Permittees shall submit the plan and schedule in the 2020 Annual Report.

C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way

- i. Task Description** –Permittees shall collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations should be on structures installed during this era.

ii. Implementation Level

Permittees shall collect at least 20 composite samples (throughout the permit-area) of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way and analyze this material for PCBs in such a way as to be able to detect a minimum PCBs concentration of 200 parts per billion. This sampling and analysis will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

iii. Reporting

Permittees shall report on the results (including all data gathered) of this investigation no later than the 2018 Annual Report.

C.12.f. Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains

- i. Task Description** – Permittees shall develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter MS4s. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff.

Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

A Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

ii. Implementation Level

- (1) The Permittees shall develop a protocol by June 30, 2019, that includes each of the following components, at a minimum:
 - a. The necessary authority to ensure that PCBs do not enter MS4s from PCB-containing materials in applicable structures at the time such structures undergo demolition;
 - b. A method for identifying applicable structures prior to their demolition; and
 - c. Method(s) for ensuring PCBs are not discharged to the storm drain from demolition of applicable structures.
- (2) By July 1, 2019, and thereafter, the Permittees shall implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to MS4s from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.
- (3) By July 1, 2019, Permittees shall develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

iii. Reporting

- (1) In their 2016, 2017, and 2018 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include working with State and local agencies on inter-agency coordination regarding building demolitions, developing ordinances or policies, obtaining information materials, updating or supplementing permit application materials, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.

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- (2) Each Permittee seeking exemption from C.12.f requirements must submit in its 2017 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.
 - (3) In their 2020 Annual Report, the Permittees shall provide documentation demonstrating implementation with each of the minimum requirements in C.12.f.ii(1)(a)-(c).
 - (4) In their 2020 Annual Report and thereafter, the Permittees shall provide documentation of each of the following items:
 - a. The number of applicable structures that applied for a demolition permit during the reporting year; and
 - b. A running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.
 - (5) In their 2020 Annual Report, Permittees shall submit an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition. This should be reported at the regional level on behalf of all Permittees.

C.12.g. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

- i. Task Description** – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas.
- ii. Implementation Level** – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.
- iii. Reporting** – The Permittees shall submit in their 2017 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2018 Annual Report. The Permittees shall report in the March 15, 2020, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.h. Implement a Risk Reduction Program

- i. Task Description** – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- ii. Implementation Level**
 - (1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.
 - (2) In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.
- iii. Reporting** – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2020 Annual Report.

C.13. Copper Controls

The Permittees shall implement the following control program for copper. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of C.13 Provisions through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

- i. Task Description** – The Permittees shall prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs.
- ii. Implementation Level**
 - (1) The Permittees shall require, when issuing building permits, use of appropriate BMPs for managing waste during and post-construction.
 - (2) The Permittees shall educate installers and operators on appropriate BMPs for managing copper-containing wastes.
 - (3) The Permittees shall enforce against noncompliance.
- iii. Reporting**
 - (1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs.
 - (2) In the 2016 Annual Report, the Permittees shall report how copper architectural features are addressed through the issuance of building permits.
 - (3) The Permittees shall report annually permitting and enforcement activities.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

- i. Task Description** – Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.
- ii. Implementation Level** – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

iii. Reporting

- (1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharges to storm drains of water containing copper-based chemicals from pools, spas, and fountains.
- (2) In the 2016 Annual Report, the Permittees shall report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.
- (3) The Permittees shall report annually on any enforcement activities.

C.13.c. Industrial Sources

i. Task Description – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

ii. Implementation Level

- (1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.
- (2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.
- (3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on site.

iii. Reporting

The Permittees shall highlight copper reduction results in the industrial inspection component in the C.13 portion of each Annual Report.

C.14. City of Pacifica and San Mateo County Fecal Indicator Bacteria Controls

The City of Pacifica (City) and San Mateo County (County) Permittees shall implement Provision C.14 for fecal indicator bacteria. The City and County shall implement fecal indicator bacteria control measures in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to this provision. The goal of this provision is to implement the urban runoff (stormwater runoff and dry weather flows) requirements of the San Pedro Creek (Creek) and Pacifica State Beach (Beach) Indicator Bacteria TMDL (TMDL) and reduce exceedances of the bacterial water quality objectives for the water contact recreation beneficial use during the term of the Permit, thereby making substantial progress toward achieving the TMDL wasteload allocations. The wasteload allocations and the dates they must be attained by are listed in Table 14.1 below. The City and County may comply with any requirement of this provision through a collaborative effort.

	San Pedro Creek		Pacifica State Beach		
	Dry Weather	Wet Weather	Summer Dry Weather (Apr. 1 to Oct. 31)	Winter Dry Weather (Nov. 1 to Mar. 31)	Wet Weather ⁴
Allowable Exceedances of Single-Sample Objectives (assuming daily sampling is conducted) ^{1,2}	4	26	0	2	30
Allowable Exceedances of Single-Sample Objectives (assuming weekly sampling is conducted) ³	1	4	0	1	5
Attainment Date	August 1, 2028	August 1, 2028	August 1, 2021	August 1, 2021	August 1, 2021

1. Allowable exceedances are calculated by multiplying exceedance rates observed in the Reference System(s) by the Number of Days during each respective period in the reference year (1994).
2. To end up with whole numbers, where the fractional remainder for the calculated allowable exceedance days exceeds 0.1, the number of days is rounded up.
3. To determine the allowable number of exceedance events given a weekly sampling regime, as practiced for monitoring San Pedro Creek and Pacifica State Beach, the number of exceedance days was adjusted by solving for "X" in the following equation: $X = (\text{exceedance days} \times 52 \text{ weeks}) / 365 \text{ days}$.
4. Wet weather is defined as any day with 0.1 inches of rain or more and the following three days.

C.14.a. Implement Control Measures to Achieve Indicator Bacteria Wasteload Allocations.

- i. **Task Description** – The City and County shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to meet the stormwater TMDL

wasteload allocations in the San Pedro Creek watershed and Pacifica State Beach Indicator Bacteria TMDL (TMDL Project Area).

ii. Implementation Level – In order to comply with this provision element:

- (1) The County shall effectively prohibit potential illicit discharges into its storm sewer system from sanitary sewer overflows or the sanitary sewer lines within its jurisdiction.
- (2) The County shall address bacteria discharges from the existing and future commercial horse and dog kennel facilities (facilities) into its storm sewer system within its jurisdiction as follows:
 - (a) Conduct annual site inspections of each facility for code compliance by June 30 of each year, beginning in 2016.
 - (b) Conduct an annual compliance review of each facility's current manure, stormwater, and drainage management plans by June 30 of each year, beginning in 2016.
 - (c) Enforcement actions for noncompliant facilities will be in line with the County's Confined Animal Ordinance.
- (3) The City shall address bacteria discharges from the existing and future commercial horse facilities (facilities) within its jurisdiction as follows:
 - (a) Review each facility's compliance with the City's Administrative Policy on "Standards for Keeping Animals."
 - (b) Review each facility's compliance with the City's Municipal Code on "Animal Excreta."
 - (c) Conduct annual compliance review and inspection of each facility by June 30 of each year, beginning in 2016.
 - (d) Take progressive enforcement action(s), as needed, to bring noncompliant facilities into compliance with the City's Administrative Policy on "Standards for Keeping Animals" and Municipal Code on "Animal Excreta."
- (4) The City shall install new dog waste clean-up signs, waste bag dispensers, and trash cans at a minimum of 10 (ten) high priority locations within the TMDL Project Area (each site to receive all three elements: sign, bag dispenser, and trash can, unless some of the elements are already in place) by June 30, 2016. The high priority sites for these installations shall be determined via visual inspections of popular dog walking areas and their potential to discharge improperly deposited dog waste to the Creek or Beach.
- (5) The City shall develop and implement a visual inspection and cleanup plan for high dog waste accumulation areas along San Pedro Creek and its tributaries by June 30, 2016. From April 1 through October 31, inspections and cleanups shall, at a minimum, be conducted on a quarterly basis (e.g., once each in April, July, and October). From November 1 through March 31, inspections and cleanups shall be conducted prior to forecast rain

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- events with a forecast rainfall depth of 0.2 inches or more (as measured at Half Moon Bay Airport (KHAF) Meteorological Station), and at a frequency of no less than once a month.
- (6) The City shall develop and implement an enhanced pet waste public outreach and education campaign by June 30, 2016, that, at a minimum, includes all the following:
 - (a) Explore the possibility of establishing a new public pet waste management stakeholder group (e.g., formal or informal dog owners club).
 - (b) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Creek and Beach to play on the local television station and to include in print ads in the Pacifica Tribune.
 - (c) Distribute a mailer with an informational brochure to residents and businesses describing proper pet waste management, the linkage of the watershed to the Creek and Beach, and the adverse impact on those water bodies and those recreating in them from improper pet waste management.
 - (d) Add a new web page to the City website with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Creek and Beach and public health.
 - (e) Create and implement a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Creek and Beach.
 - (f) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).
 - (7) The City and County, based on the results of the source characterization and BMP effectiveness, and wasteload allocation attainment analyses described in sections C.14.b-c, shall modify or refocus control measure implementation efforts as appropriate, at a frequency of no less than every two years.

iii. Reporting

- (1) No later than March 15 of each year, the City and County shall submit a comprehensive TMDL Status and Monitoring Report, reporting on the specific control measures (as listed in section C.14.a.ii above) that have been implemented in the TMDL Project Area during the forgoing October 1 through September 30 period. This report shall include:
 - (a) The number, type, and locations and/or frequency (if applicable) of control measures;
 - (b) The description, scope, and start date of pollution prevention measures; and

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- (c) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.
 - (2) Beginning with the 2017 TMDL Status and Monitoring Report and continuing in all TMDL Status and Monitoring Reports, the City and County shall update all the information as necessary to account for new control measures implemented, but not described in the 2016 TMDL Status and Monitoring Report or revisions to control measures.

C.14.b. Conduct Water Quality Monitoring to Assess Attainment of Wasteload Allocations

- i. Task Description** - The purpose of the attainment monitoring is to determine whether or not the TMDL wasteload allocations are attained.
- ii. Implementation Level** - In order to comply with this provision element, the City and County shall conduct attainment water quality monitoring activities as follows:
 - (1) **Sample Locations** – Two stations shall be monitored to assess attainment of wasteload allocations for stormwater runoff and dry weather flows: the mouth of San Pedro Creek (Creek Mouth) and Pacifica State Beach (Linda Mar #5).
 - (2) **Sampling Frequency** – The two attainment stations shall be monitored weekly on an ongoing basis for fecal indicator bacteria. The weekly sampling shall occur year-round regardless of weather conditions, provided the conditions are safe for field staff to collect the samples.
 - (3) **Constituents** –Fecal indicator bacteria species measured in freshwater samples collected from the Creek Mouth shall include E. coli and total coliform. Fecal indicator bacteria species measured in ocean water samples collected from Linda Mar #5 station shall include enterococci, fecal coliform, and total coliform.
- iii. Reporting**
 - (1) In their Annual TMDL Status and Monitoring Reports submitted on March 15 each year, the City and County shall analyze, summarize, and report the results of the ongoing attainment monitoring, as follows:
 - (a) The City and County shall complete a data evaluation, which shall focus on determining whether the TMDL wasteload allocations are being attained in San Pedro Creek and at Pacifica State Beach.
 - (b) The indicator bacteria results from the attainment monitoring stations (Creek Mouth and Linda Mar #5 stations) shall be compared to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL (Table 14.1).
 - (c) The data evaluation shall include tabulation and review of local rainfall data to determine whether the weekly attainment monitoring sampling events occurred during dry weather or wet weather.

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- (d) An ongoing quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives at the two attainment stations shall be conducted and reported annually.
 - (e) A detailed and comprehensive assessment of wasteload allocation attainment by the end of year 4 of the Permit term shall be completed. If wasteload allocations are not achieved by the end of the Permit term, no later than 180 days prior to Permit expiration, the City and County shall submit a plan in their Report Of Waste Discharge, acceptable to the Executive Officer, that describes additional control measures or increased levels of existing control measures that will be implemented to prevent or reduce discharges of bacteria to storm drain systems to attain wasteload allocations. The plan shall include implementation methods, an implementation schedule, and proposed milestones.

C.14.c. Conduct Water Quality Monitoring to Characterize Sources of Bacteria in The Project Area and to Assess BMP Effectiveness

- i. **Task Description** – The purpose of characterization monitoring is to better characterize indicator bacteria contributions from specific sources and to evaluate control measure effectiveness. The characterization monitoring shall provide data to:
 - (1) Characterize indicator bacteria densities in subwatersheds, storm drain outfalls, and pump stations that have not been sampled in the past. Results of the investigation may be used to drive future control measure actions.
 - (2) Establish baseline (or current) conditions against which future monitoring results can be compared following new or ongoing control measure implementation.

Characterization monitoring shall be conducted every other year on a water year basis (i.e., October 1 through September 30) beginning with Water Year 2016 (WY2016) (i.e., October 1, 2015 – September 30, 2016). WY2016 characterization monitoring shall assess *E. coli* densities throughout the San Pedro Creek watershed, with a focus on the culverted branches of the North Fork. The City and County may elect to focus on other areas with potential or suspected bacteria sources during subsequent years. In WY2016, human-, horse-, and dog-specific genetic markers shall be analyzed for a subset of the samples to investigate whether these species contribute fecal contamination to the Creek. The characterization monitoring shall be iterative in nature and allow for flexibility of design and details in future years. Subsequent years of characterization monitoring, at a minimum, shall have the same level of effort as WY2016; however, in future years, based on the results of the WY2016 monitoring, alternative sampling stations may be targeted, sampling intensities may be modified, sampling frequencies may be adjusted, and/or the species-specific genetic marker sampling may be revised.

ii. Implementation Level – The City and County shall conduct characterization monitoring activities as follows:

- (1) Sample Locations – in WY2016, a minimum of twelve sampling stations shall be monitored. The selected sampling stations for the WY2016 characterization monitoring are divided into three separate categories, as follows:
 - (a) Subwatersheds – Four subwatersheds shall be targeted in WY2016: the North Fork (three stations), Middle Fork (one station), Sanchez Fork (one station), and Main Stem (three stations);
 - (b) Pump stations – The Linda Mar and Anza pump stations shall be sampled during wet weather discharge events to the Beach (during dry weather, flows entering these stations are pumped to a wastewater treatment facility and do not discharge to the Creek or Beach);
 - (c) Stormwater outfalls – The Crespi Canal, which is an engineered and concrete-lined drainage ditch, shall be sampled if it has flowing water.

In addition to the above stations, the Creek mouth shall be also sampled during events when species-specific genetic marker samples are collected (see section C.14.c.ii.3).

In monitoring years subsequent to the WY2016 monitoring year, based on the results of the WY2016 monitoring, the sample locations and quantity may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

- (2) Sampling Frequency – in WY2016, the characterization stations shall be sampled a minimum of ten times over the course of the water year, as follows:
 - (a) Characterization monitoring shall begin in WY2016 with the first sample collected in Winter 2016;
 - (b) Wet season – Five sampling events shall be conducted during each of the wet season months (November through March). To the extent possible, wet season sampling events shall occur during wet weather, which as defined in the TMDL is any day with 0.1 inch of rain or more and the following three days;
 - (c) Dry season – Five sampling events shall be conducted during the dry season on a monthly basis from May through September.

In subsequent monitoring years, based on the results of the WY2016 monitoring, the sampling frequency may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

- (3) Constituents – All samples shall be analyzed for *E. coli*. In addition, during each monitoring year (i.e., WY2016, and every other water year thereafter), at a minimum, samples collected at four stations during four sampling events (two wet season, two dry season) shall be analyzed for

human-, horse-, and dog-specific genetic markers to assess whether the targeted host species contribute fecal contamination to the Creek and Beach.

- (4) Monitoring Protocols and Data Quality – Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.
- (5) Future Revisions – Any and all changes to the characterization monitoring plan in subsequent years (e.g., WY2018, WY2020, etc.) shall be submitted to the Executive Officer for review and acceptance no later than 90 days prior to implementation.

iii. Reporting

- (1) In their Annual TMDL Status and Monitoring Reports beginning with the 2016 report submitted on March 15, 2017, and every other year's report thereafter, the City and County shall submit a comprehensive Characterization Monitoring Report reporting on all data collected during the preceding October 1 through September monitoring period.
- (2) Data evaluation shall focus on addressing the following questions:
 - (a) Which land uses and/or sources contribute most to bacteria impairments in San Pedro Creek watershed?
 - (b) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed?
 - (c) What are the multi-year indicator bacteria density trends in the Creek and at the Beach (i.e., do control measures appear to be reducing bacteria)?
- (3) As appropriate, the Report shall include the following:
 - (a) Immediately following the Table of Contents, a Data Tables section that includes all the data collected pursuant to Provision C.14.d. and contains the following information pertaining to the foregoing monitoring period:
 - (i) A map showing all monitoring locations;
 - (ii) Immediately following the map, a single completed Locations and Parameters Table containing the following columns or rows for each location sampled: numeric site identifier, a short-hand site name such as "Creek Mouth," latitude, longitude, and parameters assessed;
 - (iii) Immediately following the Locations and Parameters Table, a single completed Results Table containing the following columns or rows for each location sampled: the short-hand site name and

datum/result for each constituent analyzed. Constituents that exceed applicable water quality objectives shall be highlighted.

- (b) For all data, a statement of the data quality.
- (c) An analysis of the data, which includes the following:
 - (i) Basic descriptive statistics using indicator bacteria data;
 - (ii) Identification and evaluation of any controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed;
 - (iii) Identification and analysis of any trends in stormwater or receiving water quality; and
 - (iv) Consideration of variability in the data sets.
- (d) A discussion of the data, which shall:
 - (i) Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin or the Ocean plans;
 - (ii) Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
 - (iii) Identify and prioritize water quality problems;
 - (iv) Identify potential sources of water quality problems;
 - (v) Describe followup actions;
 - (vi) Evaluate the effectiveness of existing control measures; and
 - (vii) Identify management actions needed to address water quality problems.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

- i. Discharge Type** – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:
 - (1) Flows from riparian habitats or wetlands;
 - (2) Diverted stream flows;
 - (3) Flows from natural springs;
 - (4) Rising ground waters;
 - (5) Uncontaminated and unpolluted groundwater infiltration;
 - (6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;
 - (7) Pumped groundwater from drinking water aquifers (excludes well development); and
 - (8) NPDES permitted discharges (individual or general permits).
- ii. Implementation Level** – The non-stormwater discharges listed in Provision C.15.a.i above are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-vi below.

i. Discharge Type – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

(1) Pumped Groundwater from Non-Drinking Water Aquifers

Groundwater pumped from a monitoring well, used for groundwater basin management, which is owned and/or operated by a Permittee is allowed if the following requirements are met:

(a) Implementation Level – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:

(i) The water samples shall meet water quality standards consistent with the existing effluent limitations or pollutant triggers in the Water Board's NPDES Groundwater General Permit, NPDES No. CAG912002.

(ii) The water samples shall be analyzed using approved U.S. EPA methods: (a) U.S. EPA Method 8015 Modified for total petroleum hydrocarbons; (b) U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (c) approved U.S. EPA methods to meet the triggers for the metals listed in the general permit discussed in C.15.(b)i.(1)(a)(i) above.

(iii) The water samples shall be analyzed for pH and turbidity.

If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

(b) Required BMPs and Monitoring – When greater than 2,500 gallons per day of uncontaminated (meeting the criteria in C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:

(i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream.

(ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.

(iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of banks, nuisance, contamination, and excess sedimentation in the receiving waters.

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- (iv) Maintain proper control of the flowrate and total flow during discharge so that it will not have a negative impact on the receiving waters.
 - (v) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.
 - (vii) The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (c) If the Permittee is unable to comply with the criteria in Provision C.15.b.i.(1)(b)(i)-(vii), discharge shall cease immediately and the Permittee shall employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES Groundwater General Permits.
 - (d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.
- (2) **Pumped⁴¹ Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**
- (a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements. Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.
 - (b) If the groundwater cannot be discharged to a landscaped area or bioretention unit and the discharge is greater than 2,500 gallons per day, it can only be considered for discharge once the following sampling is done to verify that the discharge is uncontaminated:
 - (i) The discharge shall meet WQS consistent with the existing effluent limitations or pollutant triggers in the Water Board's NPDES Groundwater General Permit, NPDES No. CAG912002.

⁴¹ Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

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- (ii) The Permittees shall require that water samples from these discharge types be analyzed using the following approved U.S. EPA methods:
- U.S. EPA Method 8015 Modified for total petroleum hydrocarbons, and U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds.
 - The approved U.S. EPA Methods for the metals listed below that meet the corresponding Reporting Limits:

Metal	Reporting Limit
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	1.1 µg/l
Chromium VI	11 µg/l
Copper ⁴²	5.9 µg/l
Copper ⁴³	3.4 µg/l
Copper ⁴⁴	4.7 µg/l
Lead	3.2 µg/l
Mercury	0.025 µg/l
Nickel	19 µg/l
Selenium	5 µg/l
Silver	2.2 µg/l
Thallium	1.7 µg/l
Zinc	86 µg/l
Cyanide	2.9 µg/l

- (c) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(b) above, the Permittees shall require the following:
- (i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream or if accessing the sampling points poses safety to personnel.
 - (ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.
 - (iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.

⁴² Applicable to Suisun Bay and San Pablo Bay segments of San Francisco Bay.

⁴³ Applicable to Central Bay and Lower Bay segments of San Francisco Bay.

⁴⁴ Applicable to South San Francisco Bay segments of San Francisco Bay.

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- (iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.
 - (v) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (vi) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.
 - (vii) The pH of discharged water shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.
- (d) If a Permittee determines that a discharger or a project proponent is unable to comply with the criteria in C.15.b.i.(2)(c)(i)-(vii), the Permittee shall require the discharge to cease immediately and require that the discharger employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES Groundwater General Permit.
 - (e) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be reused or directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Type – Emergency Discharges of Potable Water

- (1) **Emergency Discharges** – Discharges resulting from firefighting activities.
- (2) **Required BMPs**
 - (a) The Permittees shall implement or require firefighting personnel to implement BMPs for emergency discharges. However, the BMPs should not interfere with immediate emergency response operations or impact public health and safety. BMPs may include, but are not limited to, the plugging of the storm drain collection system for temporary storage, the proper disposal of water according to jurisdictional requirements, and the use of foam where there may be toxic substances on the property the fire is located.
 - (b) During emergency situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). The

Permittees or firefighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.

- (3) **Reporting Requirements** – Reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

Required BMPs

- (1) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their storm drain systems.
- (2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, or wash cars at commercial car wash facilities.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) Required BMPs

- (a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algacide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.
- (b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.
- (c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection⁴⁵ to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.
- (d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.

⁴⁵ This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

(e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from C.5.b for polluted (contains chlorine, copper algacide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.

(2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa, and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

(1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:

(a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;

(b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;

(c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;

(d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and

(e) Implementing the Illicit Discharge Enforcement Response Plan from C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their storm drain systems.

(2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

C.16. Discharges to Areas of Special Biological Significance

This Provision applies to stormwater discharges from the County of San Mateo into James V. Fitzgerald Marine Reserve Area of Special Biological Significance (ASBS). As set forth in the Fact Sheet, the State Water Board granted an exception to the ASBS discharge prohibition (ASBS Exception) in the Ocean Plan to applicants including the County of San Mateo for their existing stormwater discharges into ASBSs, provided they receive authorization to discharge by an NPDES permit; the discharges comply with all applicable terms, prohibitions, and special conditions of Attachment B - Special Protections (Special Protections) attached to and part of the ASBS Exception; and the discharges are essential for flood control or slope stability, designed to prevent soil erosion, occur only during wet weather, and are composed of only stormwater runoff. This Provision serves as the authorization for the County of San Mateo to discharge stormwater into the ASBS in accordance with the requirements below.

C.16.a. Discharges to the James V. Fitzgerald Marine Reserve ASBS

- i.** If the County of San Mateo meets all of the conditions set forth in Provision C.16.a.i. and C.16.a.ii., its stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS from MS4 outfalls that were constructed or were under construction prior to January 1, 2005, are permitted for those discharges that:
 - (1) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (2) Are designed to prevent soil erosion;
 - (3) Occur only during wet weather; and
 - (4) Are composed only of stormwater runoff.
- ii.** The County of San Mateo shall comply with all of the applicable terms, prohibitions, and special conditions of the Special Protections of the ASBS Exception set forth in State Water Board Resolution No. 2012-0012, as amended by State Water Board Resolution No. 2012-0031, including monitoring requirements, as they apply to stormwater. The Special Protections are hereby incorporated by reference into this Order and attached hereto as Attachment F. Notwithstanding anything to the contrary in this Order, the County of San Mateo shall not alter the natural ocean quality of the ASBS; shall not discharge trash into the ASBS; and shall not discharge non-stormwater into the ASBS except as provided in the Special Protections. As required by the Special Protections, the County of San Mateo shall address the preceding requirements (other than trash) in an ASBS Compliance Plan to be approved by the State Water Board Executive Director or the Regional Water Board Executive Officer and comply with the compliance schedule set forth in the Special Protections.
- iii.** Reporting – In addition to the monitoring requirements of the Special Restrictions, the County of San Mateo shall submit, upon approval by the State Water Board Executive Director, a copy of its approved ASBS Compliance Plan.

C.16.5. Cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District Inclusion into NPDES Permit No. CAS612008

The cities of Antioch, Brentwood, and Oakley, Unincorporated Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District (East County Permittees), located in the Central Valley Water Board’s geographic jurisdiction, are included in the definition of “Permittees” as used throughout and shall comply with all requirements of Order No. R2-2015-0049, except as provided for in this Provision. This Provision identifies those Order provisions that do not apply to the East County Permittees, and allows the East County Permittees additional time to come into compliance with the specific provisions listed below. Additionally, it incorporates requirements for the Central Valley Board’s TMDLs that apply to the East County Permittees.

C.16.5.a. Green Infrastructure Planning and Implementation

- i. Implementation Level** – Each East County Permittee shall comply with Provision C.3.j. immediately, except for the deadlines listed below.
- ii. Due Dates**

The cities of Antioch, Brentwood, and Oakley shall:

- (1) By November 30, 2019, have their Green Infrastructure framework or workplan for development of their Green Infrastructure Plan approved by their governing bodies, mayor, or city managers (as required by Order Provision C.3.j.i.(1));
- (2) By December 31, 2019, submit documentation that their Green Infrastructure frameworks or workplans for development of their Green Infrastructure Plans were approved by their governing bodies, mayors, or city managers (as required by Order Provision C.3.j.i.(1)) by November 30, 2019;
- (3) By December 31, 2020, submit their completed Green Infrastructure Plan (as described in Order Provision C.3.j.i.(2)); and,
- (4) By December 31, 2020, submit documentation of their legal mechanisms to ensure implementation of its Green Infrastructure Plan.

C.16.5.b. Inspections for Construction Site Control at Hillside Projects

- i. Implementation Level** – Each East County Permittee shall comply with Provision C.6.e. immediately, except for the deadline for C.6.e.ii.(2)(b).
- ii. Due Dates**
 - (1) Beginning July 1, 2020, each East County Permittee shall inspect all hillside projects (based on the Permittee’s map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with >15% slope)

disturbing greater than or equal to 5,000 square feet monthly, during the wet season.

- (2) In the 2020 Annual Report, each East County Permittee shall certify the criteria it uses to determine hillside developments. If the Permittee is using maps of hillside development areas or other written criteria, include a copy in the Annual Report.

C.16.5.c. Trash Load Reductions

i. Implementation Level – Each East County Permittee shall comply with Provision C.10. immediately, except for the following requirements and deadlines in Provisions C.10.a.i, C.10.a.ii, and C.10.f.v.b, which are modified as follows.

ii. Due Dates and Reporting

- (1) C.10.a.i.

By December 31, 2019, each East County Permittee shall reduce trash discharges to receiving waters by 70 percent, from baseline trash loads as depicted in the Permittee’s baseline trash generation rate maps submitted in its 2016 Annual Report, or 2019 Annual Report, if the Permittee submitted a corrected baseline trash generation rate map.

- (2) C.10.a.ii.

The East County Permittees shall have an opportunity to correct and/or revise, based on improved information, the trash levels and trash generation areas maps that were submitted to Central Valley Regional Water Board in the 2016 Annual Report. Should an East County Permittee correct and/or revise its trash generation map(s) submitted in the 2016 Annual Report, the corrected or revised trash generation map(s) shall be submitted in the 2019 Annual Report.

- (3) C.10.a.ii.a.

The C.10.a.i. percent reductions shall be demonstrated by percent of 2016 or 2019, if a revised baseline map was submitted, of Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation.

- (4) C.10.a.ii.b.

The East County Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of the latter shall be assessed with visual assessments in accordance with C.10.b.ii. If there is a full trash capture device downstream of these lands, no other trash control is required. The East County Permittees shall (i) map the location or otherwise record the location, and (ii) provide the

trash control status of all such lands greater than 10,000 ft² that are plumbed directly to their storm drain systems by December 31, 2020. This information shall be retained by the East County Permittees for inspection upon request.

(5) C.10.f.v.b.

If an East County Permittee cannot demonstrate attainment of the 2019 mandatory trash load reduction by the deadline, it shall submit a report of non-compliance in advance of the deadline or with the submittal that describes actions to comply with the mandatory reduction in a timely manner. The report shall include a plan and schedule for implementation of full trash capture systems installation sufficient to attain the required reduction. An East County Permittee may submit a plan and schedule for implementation of other trash management actions to attain the required reduction in an area where implementation of a full trash capture system is not feasible. In such cases, the report shall include identification of the area and documentation for the basis of the East County Permittee's determination that implementation of a full trash capture system is not feasible.

C.16.5.d. Mercury Controls

East County Permittees are exempted from Provision C.11, Mercury Controls.

C.16.5.e. Polychlorinated Biphenyls (PCBs) Controls

East County Permittees are exempted from Provision C.12, PCBs Controls.

C.16.5.f. Diazinon and Chlorpyrifos Controls

Task Description – The East County Permittees shall maintain wasteload allocations for diazinon and chlorpyrifos.

Implementation Level – The East County Permittees shall implement Provision C.9.

C.16.5.g. Methylmercury Monitoring

Task Description – The East County Permittees shall implement methylmercury monitoring. With the Executive Officer's approval, the East County Permittees may participate in the Delta Regional Monitoring Program (Delta RMP) or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this Provision. Participation in the Delta RMP shall consist of providing funds and/or in-kind services to the Delta RMP at least equivalent to discontinued monitoring efforts.

Implementation Level – The East County Permittees shall:

- (1) Conduct monitoring in Marsh Creek, downstream of Marsh Creek Reservoir, to analyze aqueous methylmercury in at least eight (8) samples each year using U.S. EPA or SWAMP-approved methods.

-
- (2) Direct monitoring to address the following management questions:
- What is the annual average methylmercury load from the Marsh Creek watershed?
 - How much of the Marsh Creek methylmercury load results from discharges from the MS4?
 - What is the methylmercury load reduction from the MS4 by implementation of reasonable, foreseeable control measures to the maximum extent practicable?
 - Do eutrophication and low dissolved oxygen increase methylmercury in ponded areas of Marsh Creek during low flow periods (depending on the year, low flow periods can range between mid-March through mid-November), and if so:
 - Under what circumstances do those effects reach the Delta?
 - Are there reasonable and foreseeable management actions to ameliorate that condition?

iii. Reporting

- (1) Urban Creeks Monitoring Report (UCMR) – The East County Permittees shall report monitoring and assessment results relevant to the Delta Mercury Control Program (Delta Methylmercury TMDL) as a separate section within the UCMR required under Provision C.8.h.iii. A copy of each UCMR shall also be submitted to the Central Valley Water Board.
- (2) Pollutants of Concern Monitoring Report – The East County Permittees shall report monitoring and assessment activities relevant to the Delta Methylmercury TMDL from the past water year and planned for the next water year as a separate section within the Pollutants of Concern Monitoring Report required under Provision C.8.h.iv. A copy of each Pollutants of Concern Monitoring Report shall also be submitted to the Central Valley Water Board.
- (3) Integrated Monitoring Report – The East County Permittees shall report the monitoring and assessment results as a separate section within the Integrated Monitoring Report as required under Provision C.8.h.v. A copy of each Integrated Monitoring Report shall also be submitted to the Central Valley Water Board.
- (4) The East County Permittees shall report progress on the Delta Methylmercury TMDL and recommendations for the next permit re-issuance as a separate section within the Report of Waste Discharge (ROWD) required by Provision C.20. A copy of the ROWD shall also be submitted to the Central Valley Water Board.

C.16.5.h. Delta Mercury Control Program

The WLAs for methylmercury by Delta subarea are as follows:

- Central Delta subarea: 0.75 grams/year

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- Marsh Creek subarea: 0.30 grams/year
 - West Delta subarea: 3.2 grams/year

Methylmercury waste load allocations shall be met as soon as possible, but no later than the Final Compliance Date of December 31, 2030, unless the Central Valley Regional Water Board modifies the Delta Methylmercury TMDL implementation schedule and Final Compliance Date.

At a minimum, the East County Permittees shall implement the following BMPs to reduce inorganic mercury discharges and make substantial progress toward achieving the urban runoff methylmercury load allocation established for the Delta Methylmercury TMDL.

(1) Mercury Collection and Recycling

- i. Task Description** – This Provision requires ongoing implementation of mercury collection and recycling to minimize mercury in storm water.
- ii. Implementation Level** – The East County Permittees shall continue implementing:
 - (a) Collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs); and
 - (b) Collection, recycling and/or diversion of mercury-containing waste products (e.g., gauges, batteries, fluorescent and other lamps, switches, relays and sensors) from the waste stream from industrial and commercial entities (e.g., auto dismantlers), and municipal facilities.
- iii. Reporting** – The East County Permittees shall report on these efforts in their Annual Report.

(2) Enhanced Municipal Management Practices to Reduce Sediment Discharges

- i. Task Description** – This Provision requires the ongoing implementation of BMPs to minimize sediment discharges from municipal operations and municipal maintenance activities.
- ii. Implementation Level** – The East County Permittees shall continue to implement BMPs to minimize sediment discharges during municipal operations and municipal maintenance activities. Municipal operations and municipal maintenance activities include but are not limited to the following: storm drain drop inlet and pipeline cleaning, landscaping, road construction, road repair, and pump station cleaning.
- iii. Reporting** – In each Annual Report, the East County Permittees shall list the municipal operations and municipal maintenance activities that BMPs are implemented for to minimize sediment discharges from.

(3) Public Education and Risk Reduction

-
- i. Task Description** – This Provision requires the East County Permittees to conduct ongoing education to the public on mercury pollution prevention and mercury risk reduction.
 - ii. Implementation Level** – The East County Permittees shall continue to:
 - (a) Provide mercury pollution prevention messages to residents, commercial businesses, and industrial facilities with mercury-containing products or emissions. This may be implemented as part of Provision C.7; and
 - (b) Provide notices to communities on the health risk associated with eating mercury-contaminated fish. These notices shall also include the Office of Environmental Health Hazard Assessment’s fish consumption advisories.
 - iii. Reporting** – The East County Permittees shall:
 - (a) Discuss the mercury pollution prevention messages provided under Provision C.7; and
 - (b) Summarize tasks implemented to provide notices on the health risk associated with eating mercury-contaminated fish.

C.17. Annual Reports

- C.17.a.** The Permittees shall submit Annual Reports electronically in all cases by September 30 of each year. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.16.5. A paper copy of each Annual Report shall be submitted by October 15 of each year. The East County Permittees shall also submit an electronic copy of each Annual Report to the Central Valley Water Board. The Permittees shall retain documentation as necessary to support their Annual Reports. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.
- C.17.b.** The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2016. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by April 1 of each year for the following Annual Report, to more accurately reflect the reporting requirements of Provisions C.1 – C.16.5, with the agreement of the Permittees and by the approval of the Executive Officer.
- C.17.c.** The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit, in the cover letter of the Annual Report, the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.18. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

- C.18.a.** To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;
- C.18.b.** To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board;
- C.18.c.** To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable;
or
- C.18.d.** To approve and incorporate an alternative method or methods of distributing the county load reductions for mercury or PCBs on a Permittee-specific basis, as allowed by Provisions C.11 and C.12.

C.19. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

C.20. Expiration Date

This Order expires on December 31, 2020, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

C.21. Rescission of Old Order

Order No. R2-2009-0074 is hereby rescinded on the effective date of this Order, which shall be January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

C.22. Effective Date

The Effective Date of this Order and Permit shall be January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 19, 2015.

Bruce H. Wolfe
Executive Officer

- Attachment A: Municipal Regional Stormwater Permit Fact Sheet
- Attachment B: Provision C.3.b. Sample Reporting Table
- Attachment C: Provision C.3.g. Hydromodification Applicability Maps
- Attachment D: Provision C.8. Standard Monitoring Provisions
- Attachment E: Provision C.10. Supporting Information
- Attachment F: Provision C.16. ASBS Special Protection Zone
- Attachment G: Standard NPDES Stormwater Permit Provisions

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFW	California Department of Fish and Wildlife
CEDEN	California Environmental Data Exchange Network
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CSCI	California Stream Condition Index
CWA	Federal Clean Water Act
CWC or Water Code	California Water Code
DCIA	Directly Connected Impervious Area
DPR	California Department of Pesticide Regulation
ERP	Enforcement Response Plan
FR	Federal Register
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable

MRP	Municipal Stormwater Regional Permit
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
NAFSMA	National Association of Flood & Stormwater Management Agencies
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
O&M	Operation and Maintenance
PAHs	Polynuclear Aromatic Hydrocarbons
PBDE	Polybrominated Diphenyl Ether
PCA	Pest Control Advisor
PCBs	Polychlorinated Biphenyls
PHAB	Physical Habitat (e.g., of streams)
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RAA	Reasonable Assurance Analysis
RCRA	Federal Resource Conservation and Recovery Act
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Federal Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SIC	Standard Industrial Classification
SMWPPP	San Mateo Countywide Water Pollution Prevention Program
SSID	Stressor Source Identification
SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan

State Water Board	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Federal Toxic Substances Control Act
TST	Test of Significant Toxicity
TU	Toxicity Units
UCMR	Urban Creeks Monitoring Report
U.S. EPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations
WQS	Water Quality Standards

GLOSSARY

Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the State protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.
Construction Site	Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, paving, disturbances to ground such as stockpiling, and excavation. Construction sites are all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this Permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of WQS because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff ₇ or a non-stormwater discharge ₂ .
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size ₂ .
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.

Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Floor Area Ratio	The ratio of the total floor area on all floors of all buildings at a project site (except structures or floors dedicated to parking) to the total project site area.
Full Trash Capture Device	Full trash capture systems are defined as “any device or series of devices that traps all particles retained by a 5mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area.” Trash collection booms and sea curtains do not meet this definition, but are effective for removal of floating trash if properly maintained. Because these devices do not meet the Full Trash Capture Device definition, only ¼ of the catchment area treated by these measures is credited toward meeting the trash management area requirement of C.10.a.
General Permits	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
Grading	The cutting and/or filling of the land surface to a slope or elevation.
Green Infrastructure	Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.
Gross Density	The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.
Hydrologic source control measures	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
Hydromodification	The modification of a stream’s hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.

Illicit Discharge	Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, State, or federal statutes, ordinances, codes, or regulations. The term <i>illicit discharge</i> includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Executive Officer.
Impervious Surface	A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.
Industrial Development	Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.
Infill Site	A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.
Infiltration Device	Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes french drains).
Joint Stormwater Treatment Facility	A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.
Local Roads	Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.

Maximum Extent Practicable (MEP)	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. CWA 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants.” Also see State Water Board Order WQ 2000-11.
Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law...including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in 40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; and/or (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.

Pervious Pavement	Pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and PAHs; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by the San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).

Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMPs	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Standard Industrial Classification (SIC)	A federal system for classifying establishments by the type of activity in which they are engaged using a four-digit code.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain WQS. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet WQS even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.
Toxicity Identification Evaluation (TIE)	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.
Trash and Litter	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

Treatment	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
Waste Load Allocations (WLAs)	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
Water Quality Control Plan (Basin Plan)	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water-Board, U.S. EPA, and the Office of Administrative Law where required.
Water Quality Objectives	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
Water Quality Standards	State-adopted and U.S. EPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the WQS that must be met to protect designated uses. Water quality standards also include the federal and State anti-degradation policy.
Wet Season	October 1 through April 30 of each year

ATTACHMENT A

MUNICIPAL REGIONAL STORMWATER PERMIT FACT SHEET

**FACT SHEET/RATIONALE
TECHNICAL REPORT**

for

ORDER NO. R2-2015-0049

NPDES Permit No. CAS612008

**Municipal Regional Stormwater NPDES Permit
and
Waste Discharge Requirements**

for

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program

The cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program

The City of Vallejo and the Vallejo Sanitation and Flood Control District

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I. CONTACT INFORMATION

Water Board Staff Contact: Dale Bowyer, 1515 Clay Street, Suite 1400, Oakland, CA 94612, 510-622-2323, 510-622-2501 (fax), email: dbowyer@waterboards.ca.gov

The Permit and other related documents can be downloaded from the Water Board website at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/mrp_sw_reissuance.shtml

Comments can be electronically submitted to mrp.reissuance@waterboards.ca.gov.

All documents referenced in this Fact Sheet and in the Order are available for public review at the Water Board office, located at the address listed above. Public records are available for inspection during regular business hours, from 9:00 am to 4:00 pm, Monday through Friday, 12 - 1 pm excluded. To schedule an appointment to inspect public records, contact Melinda Wong at 510-622-2430.

II. PERMIT GOALS AND PUBLIC PROCESS

Goals

The Goals for the Municipal Regional Stormwater Permit (hereinafter, the Permit) include:

1. Continue regulating six Phase I municipal stormwater NPDES permits in one consistent permit that is regional in scope.
2. Include more specificity in NPDES permit requirements than the pre-2009 permits which lacked concrete requirements and thus did not result in the desired improvement of water quality. Continue requiring (A) stormwater management actions, (B) a specific level of implementation for each action or set of actions, and (C) reporting and effectiveness evaluation requirements for each action sufficient to determine compliance.
3. Incorporate the Stormwater Management Plan level of detail and specificity into the Permit. Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits, but have not received the level of public review in the adoption process necessary relative to their importance in adequate stormwater pollutant management implementation.
4. Implement and enhance actions to control 303(d) listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
5. Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants.

Public Process

Water Board staff conducted stakeholder meetings with the Permittees and other interested parties to develop this Permit. These meetings included Water Board staff, representatives of the Permittees, and representatives of environmental groups.

Implementation

It is the Water Board's intent that this Permit shall ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. This Permit requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Water Board is requiring that these standard requirements be addressed through the implementation of technically and economically feasible control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in section 402(p) of the CWA. In addition, this Permit contains water quality-based effluent limitations to implement TMDLs. Compliance with the Discharge Prohibitions, Receiving Water Limitations, and Provisions of this Permit is deemed compliance with the requirements of this Permit. If these measures, in combination with controls on other point and nonpoint sources of pollutants, do not result in attainment of applicable water quality objectives, the Water Board may invoke Provision C.1. and C.18 to impose additional conditions that require implementation of additional control measures.

Each of the Permittees is individually responsible for adoption and enforcement of ordinances and policies, for implementation of assigned control measures or best management practices (BMPs) needed to prevent or reduce pollutants in stormwater, and for providing funds for the capital, operation, and maintenance expenditures necessary to implement such control measures/BMPs within its jurisdiction. Each Permittee is also responsible for its share of the costs of the area-wide component of the countywide program to which the Permittee belongs. Enforcement actions concerning non-compliance with the Permit will be pursued against individual Permittee(s) responsible for specific violations of the Permit.

III. BACKGROUND

Early Permitting Approach

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the pending federal NPDES regulations that would implement the amendment), the Water Board issued municipal stormwater Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo and Contra Costa counties, rather than to individual cities over 100,000 population threshold. The cities chose to collaborate in countywide groups, pool

resources and expertise, and share information, public outreach and monitoring costs, among other tasks.

During the early permitting cycles, the county-wide programs developed many of the implementation specifics that were set forth in their Stormwater Pollution Prevention Management Plans (Plans). The permit orders were relatively simple documents that referred to the Plans for implementation details. Often specific aspects of permit and Plan implementation evolved during the five year permit cycle, with relatively significant changes approved at the Water Board staff level without significant public review and comment.

Merging Permit Requirements and Specific Requirements Previously Contained in Stormwater Management Plans

U.S. Environmental Protection Agency (U.S. EPA) stormwater rules for Phase I stormwater permits envisioned a process in which municipal stormwater management programs contained the detailed BMP and specific level of implementation information, and are reviewed and approved by the permitting agency before the municipal NPDES stormwater permits are adopted. The previous permits established a definition of a stormwater management program and required each Permittee to submit an urban runoff management plan and annual work plans for implementing its stormwater management program. An advantage to this approach was that it provided maximum flexibility for Permittees to tailor their stormwater management programs to reflect local priorities and needs. However, Water Board staff found it difficult to determine Permittees' compliance with the permits, due to the lack of specific requirements and measurable outcomes of some required actions in the plans.

Moreover, these stormwater management plans and amendments thereto made by the Permittees were not subject to public input, contrary to the U.S. Ninth Circuit Court's decision in the Phase II stormwater context that public participation is required for a stormwater management plan, because the substantive information about how an operator will reduce pollutants to the maximum extent possible was found in the stormwater management plan rather than the permit itself. (*Environmental Defense Center v. EPA* (9th Cir. 2003) 344 F.3d 832, 857.)

This Permit continues to modify these previous approaches by establishing the stormwater management program requirements and defining up front, as part of the Permit Development Process, the minimum acceptable elements of the municipal stormwater management program. The advantages of this approach are that it satisfies the public involvement requirements of both the federal Clean Water Act and the California Water Code. An advantage for Permittees and the public of this approach is that the permit requirements are known at the time of permit issuance and not left to be determined later through an iterative review and approval of stormwater management plan process, during which time was spent more on getting an acceptable plan than on-the-ground actions. While it may still be necessary to amend the Permit prior to expiration where allowed, any need to do this should be minimized.

This Permit does not include approval of all Permittees' stormwater management programs or annual reports as part of the administration of the Permit. To do so would require

significantly increased staff resources. Instead, minimum measures have been established to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance. Each Permit provision and its reporting requirements are written with this in mind. That is, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each individual Permittee's compliance through annual report review and the audit process.

The challenge in drafting the Permit is to provide the flexibility described above considering the different sizes and resources of the numerous Permittees, while ensuring that the Permit is still enforceable. To achieve this, the Permit frequently prescribes minimum measurable outcomes, while providing Permittees with flexibility in the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Permit. A balance between flexibility and enforceability has been crafted into the Permit.

Current Permit Approach

As stated above, because stormwater management plans were legally an integral part of the permits and were subject to complete public notice, review and comment, this permit reissuance continues to incorporate those plan level details in the Permit, thus merging the Permittees' stormwater management plans into the Permit in one document. This Permit specifies the following: 1) requirements to effectively prohibit non-stormwater discharges into the storm drain system, pursuant to CWA § 402(p)(3)(B)(ii); 2) technology-based effluent limitations that require controls to reduce the discharge of pollutants to the "maximum extent practicable" (MEP)¹ pursuant to CWA § 402(p)(3)(B)(iii); and 3) water quality-based effluent limitations (WQBELs) pursuant to CWA § 402(p)(3)(B)(iii), which authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants," for pesticides, trash, mercury, PCBs, and bacteria, in addition to technology-based effluent limitations. WQBELs for these pollutants are appropriate for control because water quality standards are not being met and these pollutants have impaired Bay Area waters. The Permit includes requirements for the following components:

- Discharge Prohibitions and Receiving Water Limitations

¹ The Clean Water Act and its regulations have not specifically defined "MEP"; rather, it is a flexible and evolving standard. Congress established this flexible MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of storm water pollution." (*Building Industry Ass'n of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 884.) This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits. (*In re City of Irving, Texas, Municipal Storm Sewer System* (July 16, 2001) 10 E.A.D. 111 (E.P.A.)) The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of storm water management programs in reducing pollutant loading to receiving waters. This is consistent with USEPA's interpretation of storm water management programs. As explained by USEPA in its 1990 rulemaking, "EPA anticipates that storm water management programs will evolve and mature over time" (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990)).

-
- Municipal Operations
 - New Development and Redevelopment
 - Industrial and Commercial Site Controls
 - Illicit Discharge and Elimination
 - Construction Site Controls
 - Public Information and Outreach
 - Water Quality Monitoring
 - Pesticides Toxicity Controls
 - Trash Reduction
 - Mercury Controls
 - PCBs Controls
 - Copper Controls
 - Pacifica and San Mateo County Beach and San Pedro Creek Bacteria Controls for Beach and San Pedro Creek
 - Exempt and Conditionally Exempt Discharges
 - San Mateo County Discharges to ASBS

IV. ECONOMIC ISSUES

California Water Code (CWC) section 13241 requires the Water Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. CWC section 13263 requires the Water Board to take into consideration the provisions of CWC section 13241 in adopting waste discharge requirements.

In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, the California Supreme Court considered whether regional water boards must comply with CWC section 13241 when issuing waste discharge requirements under CWC section 13263(a) by taking into account the costs a permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information “depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act.” (*Id.* at p. 627.) The Court ruled that regional water boards may not consider the factors in CWC section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than applicable federal law requires. (*Id.* at pp. 618, 626-627 [“[Water Code section 13377 specifies that [] discharge permits issued by California’s regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board’s consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act...Because CWC section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a [] discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards.”]). However, when pollutant restrictions in an NPDES permit are more stringent than federal law requires, CWC section 13263 requires that the regional water boards consider the factors described in CWC section 13241 as they apply to those specific restrictions.

As discussed in Section V.C., State Mandates, the Water Board finds that the requirements in this Order are not more stringent than the minimum federal requirements. Among other requirements, federal law requires MS4 permits to include requirements to effectively prohibit non-storm water discharges into the MS4s, in addition to requiring controls to reduce the discharge of pollutants in stormwater to the MEP, and other provisions as USEPA or the State determines are appropriate for the control of pollutants in MS4 discharges.

The requirements in this Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR 122.26 and guidance; however, the requirements have been designed to be consistent with and within the federal statutory mandates described in CWA section 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. Consistent with federal law, all of the conditions in this Order could have been included in a permit adopted by USEPA in the absence of the in lieu authority of California to issue NPDES permits.

Moreover, the inclusion of numeric WQBELs in this Order does not cause this Order to be more stringent than federal law. Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. The inclusion of WQBELs as discharge specifications in an NPDES permit in order to achieve compliance with water quality standards is not a more stringent requirement than the inclusion of BMP-based permit limitations to achieve water quality standards (State Water Board Order No. WQ 2006-0012 (Boeing)). Therefore, consideration of the factors set forth in CWC section 13241 is not required for permit requirements to implement the effective prohibition on the discharge of non-stormwater discharges into the MS4 or for controls to reduce the discharge of pollutants in stormwater to the MEP, or other provisions that the Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law.

While the Water Board need not consider costs under CWC section 13241, the Water Board nevertheless has considered cost information, especially since it is a consideration in the implementation of technology controls to the MEP.

In 2000, the State Water Board issued a precedential order (Order WQ 2000-11 (Cities of Bellflower, et al.)) stating that cost of compliance with the programs and requirements of a municipal stormwater permit is a relevant factor in determining MEP. The Order also explicitly stated that a cost benefit analysis is not required. The State Water Board discussed costs as follows:

While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. . . .

These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective

BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

(State Water Board Order WQ 2000-11, *supra*, p.20.) The cost of complying with TMDL waste load allocations is not required to be considered since TMDLs are not subject to the MEP standard. Federal law requires that NPDES permits contain effluent limitations consistent with the assumptions of any applicable wasteload allocation in a TMDL. (40 C.F.R. §122.44(d)(1)(vii)(B).) With that background, we turn to economic considerations.

Economic discussions of urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, when considering the cost of implementing the urban runoff programs, it is also important to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits that result from program implementation.

It is very difficult to ascertain the true cost of implementation of the Permittees' urban runoff management programs because of inconsistencies in reporting by the Permittees. Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin that is not easily explained.² Despite these problems, efforts have been made to identify urban runoff management program costs, which can be helpful in understanding the costs of program implementation.

In 1999, U.S. EPA reported on multiple studies it conducted to determine the cost of urban runoff management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be \$9.16 per household. U.S. EPA also studied 35 Phase I municipalities, finding costs to be similar to those anticipated for Phase II municipalities, at \$9.08 per household annually.³

A study on program cost was also conducted by the Los Angeles Regional Water Quality Control Board (LARWQCB), where program costs reported in the municipalities' annual reports were assessed. The LARWQCB estimated that average per household cost to implement the MS4 program in Los Angeles County was \$12.50.

The State Water Board also commissioned a study by the California State University, Sacramento, to assess costs of the Phase I MS4 program. This study is current and includes an assessment of costs incurred by the City of Encinitas in implementing its program. Annual cost per household in the study ranged from \$18-46, with the City of Encinitas representing the upper end of the range.⁴ The cost of the City of Encinitas' program is understandable, given the City's coastal location, reliance on tourism, and consent decree with environmental groups regarding its program. For these reasons, as well as the general recognition the City of Encinitas receives for implementing a superior program, the City's program cost can be considered as the high end of the spectrum for Permittee urban runoff management program costs.

² LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003.p.2

³ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.

⁴ State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii

It is important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been implemented by municipalities. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38% of program costs are new costs fully attributable to MS4 permits. The remainder of program costs were either pre-existing or resulted from enhancement of pre-existing programs.⁵ The County of Orange found that even lesser amounts of program costs are solely attributable to MS4 permit compliance, reporting that the amount attributable to implement its Drainage Area Management Plan, its municipal stormwater permit requirements, is less than 20% of the total budget. The remaining 80% is attributable to pre-existing programs.⁶

It is also important to acknowledge that the vast majority of costs that will be incurred as a result of implementing the Order are not new. Urban runoff management programs have been in place in this region for over 25 years. Any increase in cost to the Permittees will be incremental in nature.

Urban runoff management programs cannot be considered in terms of their costs only. The programs must also be viewed in terms of their value to the public. For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by U.S. EPA to be \$158-210 annually or \$13 - \$17.50 monthly.⁷ This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento, study corroborates U.S. EPA's estimates, reporting annual household willingness to pay for statewide clean water to be \$180 or \$15 monthly.⁸ When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Another important way to consider urban runoff management program costs is to consider the implementation cost in terms of costs incurred by not improving the programs. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.⁹ A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8% among bathers at those beaches resulted in about \$3 million annually in health-related expenses.¹⁰ Extrapolation of such numbers to the beaches and other water contact recreation in San Francisco Bay and the tributary creeks of the region could result in huge expenses to the public.

⁵ Ibid. P. 58.

⁶ County of Orange, 2000. A NPDES Annual Progress Report. P. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

⁷ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

⁸ State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

⁹ Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

¹⁰ Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

Urban runoff and its impact on receiving waters also places a cost on tourism. The California Division of Tourism has estimated that each out-of-state visitor spends \$101.00 a day. The experience of Huntington Beach provides an example of the potential economic impact of poor water quality. Approximately 8 miles of Huntington Beach were closed for two months in the middle of summer of 1999, impacting beach visitation and undoubtedly impacting the local economy.

Finally, it is important to consider the benefits of urban runoff management programs in conjunction with their costs. A study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost \$2.8 billion but provide \$5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be \$5.7 to \$7.4 billion, while benefits could reach \$18 billion.¹¹ Costs are anticipated to be borne over many years – probably ten years at least. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by U.S. EPA, which found that the benefits of implementation of its Phase II stormwater rule would also outweigh the costs.¹²

Considering the above, the Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses identified in the Basin Plan and the economic information related to costs of compliance supports protecting those beneficial uses.

V. RELEVANT STATUTES, REGULATIONS, PLANS AND POLICIES

A. Legal Authorities.

This Order is issued pursuant to section 402 of the CWA and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the CWC (commencing with section 13370). This Order serves as an NPDES permit for point source discharges to surface waters. This Order also serves as waste discharge requirements pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

In addition to the legal authority citations below, they are also provided with each permit provision in this Fact Sheet.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

¹¹ LARWQCB, 2004. Alternative Approaches to Stormwater Control.

¹² Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

40 CFR 122.26(d)(2)(i)(B,C,E, and F) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B,C,D,E, and F) require that each Permittee’s permit application “shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: [...] (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; (D) Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system; (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) requires “a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. [...] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. [...] Proposed management programs shall describe priorities for implementing controls.”

40 CFR 122.26(d)(2)(iv)(A -D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Control of illicit discharges is also required.

CWC 13377 – CWC section 13377 requires that “[n]otwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.”

B. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plan. The CWA requires the Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect beneficial uses, and an antidegradation policy to prevent degrading of waters. The Water Board adopted the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs

and policies to achieve those objectives for all waters addressed through the plan. The Urban Runoff Management, Comprehensive Control Program section of the Basin Plan requires the Permittees to address existing water quality problems and prevent new problems associated with urban runoff through the development and implementation of a comprehensive control program focused on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Basin Plan's comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s. Pursuant to Water Code sections 13263 and 13377, the requirements in this Order implement the Basin Plan.

2. Water Quality Control Plan for Ocean Waters of California, California Ocean Plan

In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on October 16, 2012, and it was approved by the Office of Administrative Law and USEPA. The Ocean Plan is applicable, in its entirety, to ocean waters of the state. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to Water Code sections 13263 and 13377, the requirements of this Order implement the Ocean Plan.

The Ocean Plan prohibits the discharge of waste to designated Areas of Special Biological Significance (ASBS). ASBS are ocean areas designated by the State Water Board as requiring special protection through the maintenance of natural water quality. The California Ocean Plan states that the State Water Board may grant an exception to California Ocean Plan provisions where the State Water Board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served. In 2012, the State Water Board adopted Resolutions 2012-0012 and 2012-0031 (ASBS Exception), which grant an exception to the Ocean Plan prohibition on discharges to ASBS for a limited number of applicants, including San Mateo County for stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS. The ASBS Exception contains "Special Protections" to maintain natural water quality and protect the beneficial uses of the ASBS. In order to legally discharge into an ASBS, San Mateo County must comply with the terms of the Special Protections and obtain coverage under this Order. This Order incorporates the terms of the Special Protections for San Mateo's discharges into the ASBS.

3. National Toxics Rule (NTR) and California Toxics Rule (CTR). U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

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4. Antidegradation Policy. Federal regulations (40 CFR 131.12) require that the state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). State Water Board Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law.

The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Resolution No. 68-16 and 40 CFR section 131.12 require the Water Board to maintain high quality waters of the State unless degradation is justified based on specific findings. First, the Water Board must ensure that "existing instream uses and the level of water quality necessary to protect the existing uses" are maintained and protected. Second, if the baseline quality of a water body for a given constituent exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected through the requirements of the Order unless the Water Board makes findings that (1) any lowering of the water quality is necessary to accommodate important economic or social development in the area in which the waters are located; (2) water quality adequate to protect existing uses fully is assured; and (3) the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved.

The Water Board must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy. In particular, the Water Board must find that not only present, but also anticipated future uses of water are protected, and must ensure best practicable treatment or control of the discharges. The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of the adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting action that was consistent with the federal and state antidegradation policies. The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution 68-16 as set out below:

- a. Many of the waters within the area covered by this Order are impaired and by multiple pollutants discharged through MS4s and are not high quality waters with regard to these pollutants. In most cases, there are insufficient data to determine whether these water bodies were impaired as early as 1968, but the limited available data shows impairment dating back for more than two decades. Many such water bodies are listed on the State's CWA Section 303(d) List and the Water Board has established TMDLs to address the impairments (see V.6). This Order ensures that instream (beneficial) water uses and the level of water quality necessary to protect the existing uses is maintained and protected. This Order requires the Permittees to comply with permit provisions to implement the wasteload allocations set forth in the TMDLs in order to restore the beneficial uses of the impaired water bodies

consistent with the assumptions and requirements of the TMDLs. This Order further requires compliance with receiving water limitations to meet water quality standards in the receiving water either by showing compliance or by implementing actions to comply with water-quality based requirements (limitations) set forth in specific pollutants of concern provisions.

- b. To the extent that some of the water bodies within the area covered by this Order are high quality waters with regard to some constituents, the Board finds as follows:

Allowing limited degradation of high quality water bodies through MS4 discharges is necessary to accommodate important economic or social development in the area and is consistent with the maximum benefit to the people of the state. The discharge of stormwater in certain circumstances is to the maximum benefit to the people of the State because it can assist with maintaining instream flows that support beneficial uses, may spur the development of multiple-benefit projects, and may be necessary for flood management, and public safety as well as to accommodate development in the area. The alternative – capturing all stormwater from all storm events – would be an enormous opportunity cost that would preclude MS4 permittees from spending substantial funds on other important social needs. The Order ensures that any limited degradation does not affect existing and anticipated future uses of the water and does not result in water quality less than established standards. The Order requires compliance with receiving water limitations that act as a floor to any limited degradation.

The Order requires the highest statutory and regulatory requirements and requires that the Permittees meet best practicable treatment or control. The Order prohibits all non-stormwater discharges, with a few enumerated exceptions, through the MS4 to the receiving waters. As required by 40 CFR section 122.44(a), the Permittees must comply with the “maximum extent practicable” technology-based standard set forth in CWA section 402(p), and implement extensive minimum control measures in a stormwater management program. Recognizing that best practicable treatment or control may evolve over time, the Order includes new and more specific requirements as compared to Order No. R2-2009-0074.

5. Anti-backsliding Regulations. Section 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. While this Order allows implementation of alternative compliance paths in Provisions C.9 to C.12 and C.1 to comply with receiving water limitations for pollutants and receiving waters identified therein, the availability of the alternatives and the corresponding availability of additional time to come into compliance with receiving water limitations does not violate the anti-backsliding provisions.

The receiving water limitations provisions of this Order are imposed under section 402(p)(3)(B) of the Clean Water Act rather than based on best professional judgment, or based on section 301(b)(1)(C) or sections 303(d) or (e), and are, accordingly, not subject to the anti-backsliding requirements of section 402(o). Although the non-applicability is less clear with respect to the regulatory anti-backsliding provisions in 40 CFR 122.44(l), the regulatory history suggests that USEPA's intent was to establish the anti-backsliding regulations with respect to evolving technology standards for traditional point sources. (See, e.g., 44 Fed.Reg. 32854, 32864 (Jun. 7, 1979)). Assuming the regulatory anti-backsliding provisions apply, it is not violated for two reasons. First, the actual requirements in Provisions C.9 to C.12 and C.1 are as or more stringent than the requirements in the previous permit. Second, to the extent explicitly allowing compliance with the receiving water limitations through implementation of C.9 to C.12 and C.14 is comparable to and less stringent than what the previous permit required, the exception to backsliding based on new information and changed circumstances since the last permit applies.

The alternative compliance paths in Provisions C.9 to C.12 and C.14 of this Order were informed by new information available to the Board from experience and knowledge gained through implementation of actions required by the previous permit and results of source identification studies and control measure effectiveness studies since the adoption of the previous permit. In particular, the Water Board recognizes the need and significance of explicitly allowing time to plan, design, fund, operate and maintain controls necessary to attain water quality improvements and comply with receiving water limitations. This is especially true where, as here, the alternative compliance paths allowed by this Order requires implementation of controls that are more stringent than controls of the previous permit. Thus, even if the receiving water limitations are subject to anti-backsliding requirements, they were revised based on changed circumstances and new information that would support an exception to the anti-backsliding provisions. (40 C.F.R. § 122.44(l)(1); 40 C.F.R. § 122.62(a)(2); 40 C.F.R. §122.44(l)(2)(i)(B)(1)).

6. Impaired Waters on CWA 303(d) List. CWA section 303(d)(1) requires each state to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after implementation of technology-based effluent limitations on point sources. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "303(d) List." Periodically, U.S. EPA approves the state's 303(d) List. In October 2011, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waters.

The Water Board has established TMDLs for pesticide-related toxicity, mercury, PCBs, pathogens, among others, to remedy water quality impairments in various water bodies in and around San Francisco Bay. These TMDLs identify MS4 discharges as a source of pollutants to these water bodies, and, as required, establish wasteload allocations (WLAs) for MS4 discharges to reduce the amount of pollutant discharged to receiving waters. CWA section 402(p)(3)(B)(iii) requires the Water Board to impose permit conditions, including: “management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.” Federal regulations also require that NPDES permits contain WQBELs consistent with the assumptions and requirements of all available WLAs (40 CFR 122.44(d)(1)(vii)(B)). CWC sections 13263 and 13377 also require that permits include limitations necessary to implement water quality control plans. Therefore, this Order includes WQBELs and other provisions to implement the TMDL WLAs assigned to Permittees regulated by this Order.

7. California Environmental Quality Act. The action to adopt an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) (“CEQA”) pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit (*County of Los Angeles v. State Water Resources Control Board* (2006) 143 Cal.App.4th 985; *Pacific Water Conditioning Assn, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).
8. Endangered Species Act Requirements. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. Each Permittee is responsible for meeting all applicable federal and State Endangered Species Act requirements.

C. State Mandates

Article XIII B, Section 6(a) of the California Constitution provides that whenever “any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service.” The requirements in this Permit do not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons.

First, this Permit implements federally-mandated requirements under CWA section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal

requirements to effectively prohibit non-stormwater discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held that these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Permit is not reserved state authority under the CWA's savings clause (cf. *Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements that are not less stringent than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for MS4. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Association of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

The requirements of this Permit do not constitute a new program or a higher level of service as compared to the requirements contained in the previous permits. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the CWA and is not new to this permit cycle (33 USC section 1342(p)(3)(B)). The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is anticipated under the CWA (55 FR 47990, 48052 (Nov. 16, 1990)), and to the extent requirements in this Permit are interpreted as new advanced measures, they do not constitute a new program or higher level of service.

The maximum extent practicable standard under CWA section 402(p)(3)(B)(iii) is a flexible standard that balances a number of considerations, including technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. (*Building Ind. Ass'n. of San Diego v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 873-874, 889.) Such considerations change over time with advances in technology and with experience gained in stormwater management (55 FR 47990, 48052 (Nov. 16, 1990)). Accordingly, the determination of whether the Permit conditions exceed the requirements of federal law cannot be based on a point by point comparison of the permit conditions and the six minimum measures that are required "at a minimum" to reduce pollutants to the maximum extent practicable and to protect water quality (40 C.F.R. §122.34). Likewise, individual permit provisions cannot be considered in isolation. When implementing the federal requirement to reduce pollutants to the maximum extent practicable, the entire permit must be evaluated as a whole. The Second Appellate District of the Court of Appeal has affirmed this approach in a case that is now pending before the California Supreme Court. (*State Department of Finance v. Commission on State Mandates* (2014) 316 P.3d 1218, review granted (2013) 220 Cal.App.4th 740.)

Furthermore, in the analogous Phase II MS4 context, U.S. EPA has issued an MS4 Permit Improvement Guide (April 2010, available at: http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf) that

recommends many provisions for Phase II MS4 permits not explicitly specified in the six minimum measures established at Code of Federal Regulations, title 40, section 122.34.

The requirements of the Permit are necessary to reduce the discharge of pollutants to the MEP. The Water Board finds that the requirements of the Permit are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California (CWC sections 13001, 13370). The provisions in this to effectively prohibit non-stormwater discharges are also mandated by the CWA (33 USC section 1342(p)(3)(B)(ii)). Likewise, the provisions of this Permit to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once U.S. EPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable WLA. (40 CFR 122.44(d)(1)(vii)(B).)

Second, the Permittees' obligations under this Permit are similar to the obligations of nongovernmental dischargers who are issued NPDES permits for stormwater discharges. With a few inapplicable exceptions, the CWA regulates the discharge of pollutants from point sources (33 U.S.C. § 1342), and the Porter-Cologne regulates the discharge of waste (Water Code section 13263), both without regard to the source of the pollutant or waste. As a result, the costs incurred by local agencies to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

Third, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent Permittees have voluntarily availed themselves of the Permit, the program is not a state mandate. (Accord *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the Permittees have voluntarily sought a program-based municipal stormwater permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. EPA* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The Permittees' voluntary decision to file a Report of Waste Discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. U.S. EPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fourth, the Permittees' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under State law predates the enactment of Article XIII B, Section (6) of the California Constitution.

Finally, even if any of this Permit's provisions could be considered unfunded mandates, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order, subject to certain voting requirements contained in the California Constitution. (See Cal. Const., Art. XIII D, section 6, subd. (c); see also *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.) The Fact Sheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Permittees can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Association of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

D. Statewide General Industrial and Construction Stormwater Permits

The State Water Board has issued NPDES general permits for the regulation of stormwater discharges associated with industrial activities and construction activities. To effectively implement the New Development (and significant redevelopment) and Construction Controls, Illicit Discharge Controls, and Industrial and Commercial Discharge Controls components in this Permit, the Permittees will conduct investigations and local regulatory activities at industrial and construction sites covered by these general permits. However, under the CWA, the Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Water Board staff intends to work cooperatively with the Permittees to ensure that industries and construction sites within the Permittees' jurisdictions are in compliance with applicable general permit requirements and are not subject to uncoordinated stormwater regulatory activities.

E. Regulated Parties

Each of the Permittees listed in this Permit owns or operates a MS4, through which it discharges urban runoff into waters of the United States within the San Francisco Bay Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is "interrelated" to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the United States.

F. Permit Coverage

The Permittees each have jurisdiction over and maintenance responsibility for their respective MS4s in the Region. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Permit, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered

by this Permit. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under NPDES permitting pursuant to U.S. EPA Phase II stormwater regulations. Under Phase II, the Water Board intends to permit these federal, State, and regional entities through use of a statewide Phase II NPDES General Permit.

VI. PERMIT PROVISIONS

A. Discharge Prohibitions

Prohibition A.1. Legal Authority – CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

Prohibition A.2. Legal Authority – San Francisco Bay Basin Plan, Chapter 4 Implementation, Table 4-1, Prohibition 7.

B. Receiving Water Limitations

Receiving Water Limitation B.1. Legal Authority – San Francisco Bay Basin Plan, Chapter 3, Water Quality Objectives.

Receiving Water Limitation B.2. Legal Authority – Federal regulations require each NPDES permit to include limitations necessary to achieve water quality standards. 40 CFR 122.44(d)(1)(i). The State Water Board has previously determined that limitations necessary to meet water quality standards are appropriate for the control of pollutants discharged by MS4s and must be included in MS4 permits. (State Water Board Orders WQ 91-03, 98-01, 99-05, and 2001-15).). This Order accordingly requires that discharges shall not cause or contribute to violations of water quality standards.

C. Provisions

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The Water Board’s Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) contains water quality objectives as well as the following waste discharge prohibition: “The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of

pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited.”

California Water Code section 13050(l) states “(1) ‘Pollution’ means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) ‘Pollution’ may include “contamination.”

California Water Code section 13050(k) states “‘Contamination’ means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. ‘Contamination’ includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.”

California Water Code section 13050(m) states “‘Nuisance’ means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes.”

California Water Code section 13241 requires each water board to “establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance [...]”

California Water Code Section 13243 provides that a water board, “in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”

California Water Code Section 13263(a) provides that waste discharge requirements prescribed by the water board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A -D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires NPDES permits to include any requirements necessary to “[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director

determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

State Water Board Orders WQ 98-01 and 99-05 are precedential orders that require municipal stormwater permits to not cause or contribute to exceedances of water quality standards in the receiving water. The State Water Board Order 95-01 specifically requires that Provision C.1 include language that Permittees shall comply with discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges, whereby adopting an iterative approach to complying with the limitations. Courts have held that compliance with the iterative process does not excuse liability for violations of water quality standards. (*Building Industry Assn. of San Diego v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866; *City of Rancho Cucamonga v. Regional Water Quality Control Bd.* (2006) 135 Cal.App.4th 1377; *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2011) 673 F.3d 880, rev'd on other grounds sub nom. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2013) 133 S.Ct. 710, mod. by *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, cert. den. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2014) 134 S.Ct. 2135.)

State Water Board Order WQ 2015-0075 directs regional water boards to consider reasonable alternative compliance options for meeting receiving water limitations. Order WQ 2015-0075 specifically directs regional water boards to follow the principles stated below when issuing a municipal stormwater permit, unless a board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons.

1. The receiving water limitations provisions of Phase I MS4 permits should continue to require compliance with water quality standards in the receiving water and should not deem good faith engagement in the iterative process to constitute such compliance. The Phase I MS4 permits should therefore continue to use the receiving water limitations provisions as directed by State Water Board Order WQ 99-05.
2. The Phase I MS4 permits should include a provision stating that, for water body-pollutant combinations with a TMDL, full compliance with the requirements of the TMDL constitutes compliance with the receiving water limitations for that water body-pollutant combination.
3. The Phase I MS4 permits should incorporate an ambitious, rigorous, and transparent alternative compliance path that allows permittees appropriate time to come into compliance with receiving water limitations without being in violation of the receiving water limitations during full implementation of the compliance alternative.
4. The alternative compliance path should encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements.

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5. The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles.
 6. The alternative compliance path should encourage multi-benefit regional projects that capture, infiltrate, and reuse stormwater and support a local sustainable water supply.
 7. The alternative compliance path should have rigor and accountability. Permittees should be required, through a transparent process, to show that they have analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions. Permittees should be further required, again through a transparent process, to monitor the results and return to their analysis to verify assumptions and update the solutions. Permittees should be required to conduct this type of adaptive management on their own initiative without waiting for direction from the regional water board.

Alternative Path to Compliance with Discharge Prohibitions and Receiving Water Limitations for Certain Pollutants

This Order, as did the previous order, goes beyond requiring an open-ended iterative approach to compliance with water quality standards by including pollutant-specific provisions, C.9 through C.12 and C.14, with numerical WQBELs or narrative WQBELs with milestones and deadlines. The provisions and limitations implement adopted TMDL wasteload allocations and the associated implementation plans in the Basin Plan and specify what Permittees must do during the term of the Order to manage discharges of the specific pollutants that may cause or contribute to violations of water quality standards. If complied with, the Permittees will be deemed in compliance with Receiving Water Limitations B.1 and B.2 for these pollutants. The requirements of C.9 through C.12 and C.14 are ambitious and rigorous because they will require Permittees to fully commit to and implement challenging but achievable tasks to ultimately meet water quality objectives, including objective interim numeric effluent limitations. Accordingly, this Order explicitly applies principles 1, 2, and 3 (above) of State Water Board Order WQ 2015-0075 and provides an alternative path to compliance with Discharge Prohibitions and Receiving Water Limitations for the following pollutant – water body combinations: pesticides and pesticide-caused toxicity in all receiving waters (Provision C.9); trash in all receiving waters (Provision C.10); mercury in all San Francisco Bay segments and receiving waters in the Guadalupe River watershed (Provision C.11); polychlorinated biphenyls (PCBs) in all San Francisco Bay segments (Provision C.12); and fecal indicator bacteria in San Pedro Creek and Pacifica State Beach receiving waters (Provision C.14).

This rigorous compliance alternative also applies Order WQ 2015-0075 principle 4. It implements all applicable TMDL requirements and calls for or allows for implementation of trash, mercury, and PCBs controls in watershed and drainage areas where they are most needed and most likely to be effective and promotes and allows use of controls with multiple pollutant benefits. The watershed-based approach addressing multiple pollutants is not appropriate for the pesticides and pesticide-caused toxicity requirements. Consistent with the TMDL wasteload allocation and implementation plan, these requirements are pollution prevention management practices specific to urban use

pesticides and apply to all watersheds and drainage areas. The fecal indicator bacteria requirements for discharges to San Pedro Creek and Pacifica State Beach receiving waters implement TMDL requirements and call for fecal indicator bacteria-specific pollution prevention controls consistent with current knowledge of sources and activities in the watershed.

Provision C.3 of the Order calls for adoption and implementation of low impact development consistent with Order WQ 2015-0075 principles 5 and 6. The mercury and PCBs provisions (C.11 and C.12) explicitly recognize and call for use of green infrastructure to meet pollutant load reduction requirements. The trash provision allows use of low impact development green infrastructure as full trash capture systems, if appropriately designed, operated, and maintained. Although not directly required in the pesticides and fecal indicator bacteria provisions, low impact development principles and development and implementation of green infrastructure plans, including consideration of multi-benefit regional projects, could also have pesticides and bacteria load reduction benefits.

Consistent with Order WQ 2015-0075 principle 7, each of the pollutant-specific provisions also contain concrete milestones and deadlines and reporting requirements that provide rigor and accountability. All reports, plans, and other required submittals will be made available to all interested parties and input and feedback from interested parties will be considered in the evaluation of all submittals.

The Order also includes monitoring requirements (Provision C.8) to assess water body and watershed conditions and effectiveness of control actions towards attainment of water quality standards and to inform selection and implementation of new control actions or adaptive improvements of control actions.

Consistent with the TMDLs, more time than the term of the Order will be necessary to attain water quality standards for mercury and PCBs. In these cases, the associated Order provision includes an additional requirement for the Permittees to submit a proposed plan of additional or improved control actions and schedule of implementation to attain water quality standards or TMDL wasteload allocations for the Water Board's consideration of numerical or narrative WQBELs in the subsequent order.

This Order also includes specific requirements to control copper in discharges to all San Francisco Bay segments (Provision C.13) in accordance with the Basin Plan implementation plan of the site-specific water quality objectives for copper in these receiving waters. However, the Permittees already comply with Receiving Water Limitations for copper in all San Francisco Bay segments since these copper objectives are attained in these receiving waters.

C.2. Municipal Operations

Legal Authority

The following legal authority applies to Provision C.2:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), California Water Code (CWC) sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires “[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires “[a] description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires “[a] description of procedures to assure that flood management projects assess the impacts on the water quality of receiving waterbodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) requires “[a] description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires “[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.2

- C.2-1** Municipal maintenance activities are potential sources of pollutants unless appropriate inspection, pollutant source control, and cleanup measures are implemented during routine maintenance works to minimize pollutant discharges to storm drainage facilities.

Sediment accumulated on paved surfaces, such as roads, parking lots, parks, sidewalks, landscaping, and corporation yards, is the major source of point source pollutants found in urban runoff. Thus, Provision C.2 requires the Permittees to designate minimum BMPs for all municipal facilities and activities as part of their ongoing pollution prevention efforts as set forth in this Permit. Such prevention measures include, but are not limited to, activities as described below. The work of municipal maintenance personnel is vital to minimize stormwater pollution because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain. Maintenance personnel also play an important role in educating the public and in reporting and cleaning up illicit discharges.

- C.2-2** Road construction and other activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. In particular, poorly designed roads can act as man-made drainages that carry runoff and sediment into natural streams, impacting water quality.

Provision C.2 also requires the Permittees to implement effective BMPs for the following rural works maintenance and support activities: (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport; (b) Identification and prioritization of rural roads maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources; (c) Road and culvert construction designs that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability; (d) Development and implementation of an inspection program to maintain road structural integrity and prevent impacts to water quality; (e) Provide adequate maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, re-grade roads to slope outward where consistent with road engineering safety standards, and install water bars; and (f) When replacing existing culverts or redesigning new culverts or bridge crossings use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.

Road construction, culvert installation, and other rural maintenance activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. Poorly

designed roads can act as preferential drainage pathways that carry runoff and sediment into natural streams, impacting water quality. In addition, other rural public works activities, including those the BMP approach would address, have the potential to significantly affect sediment discharge and transport within streams and other waterways, which can degrade the beneficial uses of those waterways. This Provision would help ensure that these impacts are appropriately controlled.

Specific Provision C.2 Requirements

Provision C.2.a-e. (Operation and Maintenance of Municipal Separate Storm Sewer Systems (MS4) facilities) requires that the Permittees implement appropriate pollution control measures during maintenance activities and to inspect and, if necessary, clean municipal facilities, such as conveyance systems, pump stations, and corporation yards, before the rainy season. The requirements will assist the Permittees to prioritize tasks, implement appropriate BMPs, evaluate the effectiveness of the implemented BMPs, and compile and submit annual reports.

Provision C.2.d. (Stormwater Pump Stations) Water Board staff investigated the occurrence of low salinity and dissolved oxygen (DO) conditions in Old Alameda Creek (Alameda County) and Alviso Slough (Santa Clara County) in September and October of 2005. Water Board staff became aware of this problem in their review of receiving water and discharge sampling conducted by the U.S. Geological Survey as part of its routine monitoring on discharges associated with the former salt ponds managed by the U.S. Fish and Wildlife Service in Santa Clara County and the California Department of Fish and Wildlife in Alameda County.

Discharge of black-colored water from the Alvarado pump station to Old Alameda Creek was observed at the time of the data collection on September 7, 2005, confirming dry weather urban runoff as the source of the documented violations of the 5 mg/L (DO) water quality objective. Such conditions were measured again on September 21, 2005.

On October 17, 2005, waters in Alviso Slough were much less saline than the salt ponds and had the lowest documented dissolved oxygen of the summer, suggesting a dry weather urban runoff source. The (DO) sag was detected from surface to bottom at 2.3 mg/L at a salinity of less than 1 part per thousand (ppt), mid-day, when oxygen levels should be high at the surface. The sloughs have a typical depth of 6 feet.

Investigations of these incidents found that stormwater pump stations, universally operated by automatic float triggers, have been confirmed as the cause in at least one instance and may represent an overlooked source of controllable pollution to the San Francisco Bay Estuary and its tidal sloughs. The discharges of dry weather urban runoff from these pump stations were not being managed to protect water quality and surveillance monitoring detected measurable negative water quality consequences of this current state of pump station management.

Pump station discharges are controllable point sources of pollution that are virtually unregulated, causing violations of water quality objectives. Therefore, the Previous Permit required (1) an inventory of pump stations, (2) inspection of pump stations twice a year during the dry season to collect (DO) data and implement corrective actions for DO

at or below 3 milligrams per liter (mg/l), and (3) inspection of pump stations after two storm events during the wet season to collect data on the presence of trash and other water quality parameters.

The Permittees have submitted a list of all pump stations. DO data in annual reports shows that turning on the pumps aerates the water, thereby increasing the DO of the water to at least 3 (mg/l), the minimum DO requirement.

40 CFR 122.26(d)(2)(I)(f) requires Permittees to carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions, including the prohibition on illicit discharges to the MS4. Pump stations, which collect and discharge from the storm drain systems, cannot contribute discharges with dissolved oxygen (DO) level below 3 mg/L. Previous pump station reporting shows that implementation of corrective actions (i.e., BMPs) prior to the pumps, combined with using the pumps to discharge collected water, as opposed to simply allowing it to overflow, aerates the water to a DO level of at least 3 mg/L. Thus, this Permit removes the specific requirements for the monitoring of DO at pump stations and allows the Permittees greater flexibility to ensure that all water discharged from pumps stations is at least 3 mg/l. The reporting requirement has also been removed from this Permit, but Permittees must maintain any sampling records and make them available upon request.

The Previous Permit also wanted to explore the use of the pump stations for trash capture to protect the beneficial uses of the receiving waters. Information collected shows that pump stations as trash capture devices are inefficient because their reservoirs are too small to contain trash. At the same time, many municipalities have installed full and partial trash capture devices at select storm drain inlets.

Provision C.2.f. (Corporation Yard BMP Implementation) requires Permittees to implement the BMP in site-specific Stormwater Pollution Prevention Plans (SWPPPs) to minimize pollutant discharges in stormwater and non-stormwater discharges. The Previous Permit required SWPPPs to be developed and implemented by July 1, 2010. SWPPPs should have specific BMPs for different functions of the corporation yard and provide guidance for frequent mini inspections to ensure that appropriate BMPs are implemented. During the Previous Permit term, Water Board staff and U.S. EPA staff inspected a few of the Permittees' corporation yards and evaluated the corresponding SWPPPs. All inspected corporation yards had actual and/or potential discharges. Most of the countywide programs developed templates for the SWPPPs. Individual Permittees were supposed to customize the template to fit their corporation yards. Some Permittees did not fully customize the SWPPP template. A few Permittees have comprehensive, site-specific SWPPPs. Water Board staff also evaluated this Provision in annual reports. The Previous Permit required routine inspections in different areas of the corporation yard and at least one inspection prior to the start of the rainy season. The intent of the inspection requirement was to have regular mini-inspections and one full corporation yard inspection sometime in late August or in September, right before the start of the rainy season in October, to make sure the corporation yard was clean and all issues were resolved before the start of the rainy season. Some Permittees inspected in the spring or early summer and documented that as the inspection for the year to comply with this

Provision in the annual report due the following September. Other Permittees did not inspect until late fall or winter. Some Permittees documented issues but the annual reports either did not document the corrective actions or corrective actions were implemented weeks or months later. Therefore, this Permit clearly identifies the timeframe of when the annual inspections must occur and requires corrective actions to be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. This is consistent with the timeframe for implementation of corrective actions in provisions C.4. and C.5.

C.3. New Development and Redevelopment

Legal Authority

Broad Legal Authority: CWA Sections 402(p)(3)(B)(ii-iii), CWA Section 402(a), CWC Sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Fact Sheet Findings in Support of Provision C.3

- C.3-1** Urban development begins at the land use planning phase; therefore, this phase provides the greatest cost-effective opportunities to protect water quality in new development and redevelopment. When a Permittee incorporates policies and principles designed to safeguard water resources into its General Plan and development project approval processes, it has taken a critical step toward the preservation of local water resources for current and future generations.
- C.3-2** Provision C.3. is based on the premise that Permittees are responsible for considering potential stormwater impacts when making planning and land use decisions. The goal of Provision C.3. is for Permittees to use their planning authority to reduce pollutant discharges and runoff flow into the storm drain system primarily through the implementation of low impact development (LID) techniques.
- C.3-3** To accomplish this goal, Permittees shall require new development and redevelopment projects to implement appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flow from these projects. Permittees shall also complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs and other storm drain infrastructure elements. Neither Provision C.3. nor any of its requirements are intended to restrict or control local land use decision-making authority.
- C.3-4** Certain control measures implemented or required by Permittees for urban runoff management might create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative efforts among Permittees, local vector control agencies, Water Board staff, and the State Department of Public Health are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.
- C.3-5** The Water Board recognized in its Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control (Resolution No. 94-102) that urban runoff treatment wetlands that are constructed and operated pursuant to that Resolution and are constructed outside a creek or other receiving water are stormwater treatment systems and, as such, are not waters of the United States subject to

regulation pursuant to Sections 401 or 404 of the federal Clean Water Act. This is consistent with the stayed 2015 Clean Water Rule exempting stormwater control features from the definition of “waters of the U.S.” (80 Fed. Reg. 37054 (June 29, 2015).) Water Board staff is working with the California Department of Fish and (CDFW) and U.S. Fish and Wildlife Service (USFWS) to identify how maintenance for stormwater treatment controls required under permits such as this Permit can be appropriately streamlined, given CDFW and USFWS requirements, and particularly those that address special status species. This Permit requires Permittees to ensure that constructed wetlands installed by Regulated Projects are consistent with Resolution No. 94-102 and the operation and maintenance requirements contained therein.

- C.3-6** The Permit requires Permittees to ensure that pervious pavement systems of 3000 square feet or more, onsite, joint, and offsite stormwater treatment systems, and HM controls installed by Regulated Projects are properly operated and maintained for the life of the Projects. In cases where the responsible parties for the treatment systems or HM controls have worked diligently and in good faith with the appropriate state and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment systems or HM controls, but these approvals are not granted, the Permittees shall be considered by the Water Board to be in compliance with Provision C.3.h.iv. of the Permit.

Specific Provision C.3 Requirements

Provision C.3.a. (New Development and Redevelopment Performance Standard Implementation) sets forth essentially the same legal authority, development review and permitting, environmental review, training, and outreach requirements that are contained in the previous permit.

Provision C.3.b. (Regulated Projects) establishes the different categories of new development and redevelopment projects that Permittees must regulate under Provision C.3. These categories are defined on the basis of the land use and the amount of impervious surface created and/or replaced by the project because all impervious surfaces contribute pollutants to stormwater runoff and certain land uses contribute more pollutants. Impervious surfaces can neither absorb water nor remove pollutants as the natural, vegetated soil they replaced can. Also, urban development creates new pollution by bringing higher levels of car emissions that are aerially deposited, car maintenance wastes, pesticides, household hazardous wastes, pet wastes, and trash, which can all be washed into the storm sewer.

This permit is a 3rd generation permit containing stormwater treatment requirements for development projects. Past permits have grandfathered development projects approved prior to those permits’ effective dates, essentially exempting the projects and allowing them to provide no or insufficient stormwater treatment. Water Board staff believe a small number of these development projects that were approved more than a decade ago have still not begun construction. A decade is sufficient time to justify requiring the Permittees to revise and update these stagnant development permits to include current LID treatment requirements. Therefore, this provision removes the grandfathering of

development projects approved with no stormwater treatment requirements and that have not begun construction. However, this provision allows exemptions for some of these previously approved projects in situations where the Permittees lack legal authority to retroactively change their previous approvals. This provision also allows some of these previously approved projects to use non-LID stormwater treatment instead of LID treatment because of space constraints.

To confirm that the total number of Projects previously approved without any Provision C.3. compliant stormwater treatment is indeed small, Provision C.3.b.iv.(1) includes a requirement for Permittees to provide in their 2017 Annual Report a complete list of these types of development projects. For each such Project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). This reporting requirement only applies to Permittees that have Projects subject to Provision C.3.b.i.(2).

Regulated Projects approved with non-LID stormwater treatment measures in compliance with the hydraulic sizing criteria of Provision C.3.d. will continue to be grandfathered.

Provision C.3.c (Low Impact Development (LID)) recognizes LID as a cost-effective, beneficial, holistic, integrated stormwater management strategy.¹³ The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as preserving undeveloped open space, rain barrels and cisterns, green roofs, pervious pavement systems, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. This is a standard, current, ordinary, and regular practice being implemented in numerous jurisdictions in California, the U.S., and internationally, including: the Permittees' jurisdictions, Los Angeles, San Diego, San Francisco, Portland, OR, Seattle, Minneapolis, Milwaukee, Kansas City, Chicago, New York City, Philadelphia, Auckland, New Zealand, Chinese "sponge cities" such as Wuhan and Changde, and others.

This Provision sets forth a three-pronged approach to LID with source control, site design, and stormwater treatment requirements. The concepts and techniques for incorporating LID into development projects, particularly for site design, have been extensively discussed in BASMAA's Start at the Source manual (1999) and its companion document, Using Site Design Techniques to Meet Development Standards for Stormwater Quality (May 2003), as well as in various other LID reference documents.

Provision C.3.c.i.(1) lists source control measures that must be included in all Regulated Projects as well as some that are applicable only to certain types of

¹³ U.S. EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (Publication Number EPA 841-F-07-006, December 2007) http://water.epa.gov/polwaste/green/upload/2008_01_02_NPS_lid_costs07uments_reducingstormwatercosts-2.pdf

businesses and facilities. These measures are recognized nationwide as basic, effective techniques to minimize the introduction of pollutants into stormwater runoff.

Provision C.3.c.i.(2)(a) lists site design elements that must be implemented at all Regulated Projects. These design elements are basic, effective techniques to minimize pollutant concentrations in stormwater runoff as well as the volume and frequency of discharge of the runoff. One design element requires each Regulated Project to include at least one site design measure from a list of six that includes recycling of roof runoff, directing runoff into vegetated areas, and installation of pervious pavement systems instead of traditional paving. All these measures serve to reduce the amount of runoff and its associated pollutants being discharged from the Regulated Project.

Provision C.3.c.i.(2)(b) requires the Permittees to collectively develop and adopt design specifications for pervious pavement systems, subject to the Executive Officer's approval. However, this subprovision allows Permittees to reference pervious pavement design specifications previously developed by countywide programs and adopted into countywide stormwater handbooks. Design specifications are necessary because improperly designed and engineered pervious pavement systems may cause flooding and the discharge of insufficiently treated stormwater runoff.

Provision C.3.c.i.(2)(c) requires each Regulated Project to treat 100% of the Provision C.3.d. runoff with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

Provision C.3.c.i.(2)(c)(i) defines LID treatment measures as harvesting and use, infiltration, evapotranspiration, or biotreatment.

The Previous Permit required that a properly engineered and maintained biotreatment system may be considered only if it was infeasible to implement harvesting and use, infiltration, or evapotranspiration at a project site. Infeasibility may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
- Locations within 100 feet of a groundwater well used for drinking water.
- Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
- Locations with potential geotechnical hazards.
- Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- Locations with tight clay soils that significantly limit the infiltration of stormwater.

The Previous Permit also required the Permittees to produce two reports during the permit term. The first report¹⁴ established criteria and procedures for Permittees to follow to implement the hierarchy of LID treatment measures listed above (i.e., harvesting and use, infiltration, and evapotranspiration must be considered prior to biotreatment). The second report¹⁵ reviewed data from two years of the Permittees' Annual Reports to evaluate the results of applying the feasibility / infeasibility criteria. The conclusions of the second report were:

- Infiltration of some runoff is feasible on most projects, although in the clay soils typical of the Bay Area, the amount of runoff that can be infiltrated is unpredictable and highly variable.
- Very few development projects create the quantity and timing of non-potable water demand required to feasibly harvest and use the amount of runoff specified in Provision C.3.d.
- Bioretention facilities, when designed according to the criteria in current Permittee guidance, could infiltrate 40% - 80% of the total runoff, depending on rainfall patterns and facility size. However, the amount of runoff that would be infiltrated over the life of a particular project is variable and unpredictable because of uncertainty in the near-term and long-term infiltration performance of underlying soils. Infiltration can be maximized by ensuring project designs meet current design criteria and by ensuring treatment systems are constructed as designed.

The Permittees completed a "White Paper" on Provision C.3. on February 27, 2015.¹⁶ The White Paper concluded that the pollutant removal performance of biotreatment facilities, overall and on average, is equivalent or better than the likely real-world performance of harvest and use facilities and as good as the likely performance of infiltration facilities when considered over the long term. The White Paper also noted that biotreatment facilities require less maintenance and are less prone to failure than harvest and use facilities, and in some cases, are also preferable to direct infiltration facilities.

Based on the data provided by the above Permittee reports, this Permit removes the Previous Permit's restriction on allowing properly engineered and maintained biotreatment systems only after an infeasibility analysis of harvesting and use, infiltration, or evapotranspiration treatment measures.

Provision C.3.c.i.(2)(c)(ii) requires biotreatment systems to meet minimum performance specifications in order to be considered as LID treatment. This subprovision also requires biotreatment soil media to meet the current minimum specifications developed and included in the Previous Permit.¹⁷ However, this subprovision recognizes that the current soil media specifications may need to be

¹⁴ *Harvest and Use, Infiltration and Evapotranspiration Feasibility/ Infeasibility Criteria Report (2011)*

¹⁵ *Status Report on the Application of Feasibility / Infeasibility Criteria for Low Impact Development (2013)*

¹⁶ BASMAA, February 27, 2015. "White Paper" on Provision C.3 in MRP 2.0: Final Report.

¹⁷ Attachment L of Board Order No. R2-2009-0074, adopted October 14, 2009, and revised November 27, 2011.

modified because of variability in climate, rainfall, and compost composition among the different counties. Therefore, this subprovision allows for the Permittees to collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the current soil media minimum specifications, subject to the Executive Officer's approval.

Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) lists the hydraulic sizing design criteria that the stormwater treatment systems installed for Regulated Projects must meet. The volume and flow hydraulic design criteria are the same as those required in the Previous Permit. These criteria ensure that stormwater treatment systems will be designed to treat the optimum amount of relatively smaller-sized runoff-generating storms each year. That is, the treatment systems will be sized to treat the majority of rainfall events generating polluted runoff but will not have to be sized to treat the few very large annual storms as well. For many projects, such large treatment systems become infeasible to incorporate into the projects.

Provision C.3.d.iv. defines infiltration devices and establishes limits on the use of stormwater treatment systems that function primarily as infiltration devices. The restriction that infiltration devices have to be deeper than wide has been removed to reflect current design practices. The intent of the Provision is to ensure that the use of infiltration devices, where feasible and safe from the standpoint of structural integrity, must also not cause or contribute to the degradation of groundwater quality at the project sites.

Provision C.3.e (Alternative or In-Lieu Compliance with Provision C.3.b.) recognizes that not all Regulated Projects may be able to install LID treatment systems onsite because of site conditions, such as existing underground utilities, right-of-way constraints, and limited space.

Provision C.3.e.i. This Provision allows any Regulated Project to provide LID treatment for up to 100% of the required Provision C.3.d. stormwater runoff at an offsite location or pay equivalent in-lieu fees to provide LID treatment at a Regional Project, as long as the offsite or Regional Project is in the same watershed as the Regulated Project and constructed within 3 years of the end of construction of the Regulated Project. The 3 years of additional time are allowed because more time may be required to complete construction of offsite and Regional projects because of administrative, legal, and/or construction delays. We acknowledge in some instances, an even longer time may be required to complete construction of Regional Projects because they may involve a variety of public agencies and stakeholder groups and a longer planning and construction phase. Therefore, the timeline for completion of a Regional Project may be extended up to 5 years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

Provision C.3.e.ii. (Special Projects) When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and auto-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these types of Special Projects. This Provision includes specific criteria for determining which types of Regulated Projects may be considered Special Projects and establishes different categories of Special Projects based on size, land use type, and density. Except for Category A, which represents the smallest Special Projects, this Provision also uses location, density, and parking criteria to establish a tiered approach for determining the total LID Treatment Reduction Credit available for any given Special Project. The total available LID Treatment Reduction Credit may be used to reduce the amount of stormwater runoff that must be treated with LID stormwater treatment systems. The remaining amount of stormwater runoff must be treated with one or a combination of the following two specific non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

This Provision is the same as in the Previous Permit except for the following three changes:

- Density LID Treatment Reduction Credits are allowed for mixed use development projects, which consist of a mix of residential and commercial land uses, based on density measured by either the dwelling units per acre or floor area ratio. This change acknowledges that mixed use development projects can vary from mostly commercial to mostly residential. The Previous Permit did not accommodate this variability and penalized dense mixed use projects that are mostly residential by restricting density LID Treatment Reduction Credits to only floor area ratio criteria.
- Definitions of gross density and floor area ratio have been included in Provision C.3.b.ii. to aid consistent implementation of this Provision by all Permittees. Gross Density is defined as the total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses. Floor Area Ratio (FAR) is defined as the ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area. Gross density and FAR have been purposely defined to include public rights-of-way, recreational, civic, commercial, and other non-residential uses so as to raise the bar for Regulated Projects to qualify for the LID Reduction Credits allowed in Provision C.3.e.ii. That is, these more conservative gross density and FAR values may result in some Regulated Projects qualifying for less LID Reduction Credits or not qualifying at all.

The reporting data for Special Projects under the current permit shows that “lack of space to provide full LID stormwater treatment” is the most frequent reason invoked for why 100% LID treatment onsite is infeasible. Therefore, it is appropriate that the space reserved for public rights-of-way, recreation, civic,

commercial, and other non-residential uses are included in the calculations for gross density and FAR, especially since many of these areas may be used for installation of LID treatment measures.

- To reduce the burden of reporting, the semi-annual reporting of Special Projects that are being considered by Permittees prior to the Permittees granting final planning approval has been reduced to annual, within the Annual Report. Although the frequency of reporting has been reduced, the current reporting requirements for this Provision are unchanged because the data is necessary for Water Board staff to validate the Permittees' analysis of the number and size of potential Special Projects that may be approved during this permit term. Water Board staff intends to use the data collected in the proposed reporting requirements to revise the Special Projects criteria as appropriate for the next permit term.

Provision C.3.f (Alternative Certification of Stormwater Treatment Systems) allows Permittees to have a third-party review and certify a Regulated Project's compliance with the hydraulic design criteria in Provision C.3.d. Some municipalities do not have the staffing resources to perform these technical reviews. The third-party review option addresses this staffing issue. This Provision requires Permittees to make a reasonable effort to ensure that the third-party reviewer has no conflict of interest with regard to the Regulated Project being reviewed.

Provision C.3.g. (Hydromodification Management) requires that certain new development projects manage increases in stormwater runoff flow and volume so that post-project runoff shall not exceed estimated pre-project runoff rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Background for Provision C.3.g. Based on Hydrograph Modification Management Plans prepared by the Permittees, the Water Board adopted hydromodification management (HM) requirements for Alameda Permittees (March 2007), Contra Costa Permittees (July 2006), Fairfield-Suisun Permittees (March 2007), Santa Clara Permittees (July 2005), and San Mateo Permittees (March 2007). Those HM requirements are stated in Provision C.3.g., and Attachment C includes maps prepared by the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees showing areas where HM requirements apply.

The Alameda, Santa Clara and San Mateo Permittees have adapted the Western Washington Hydrology Model¹⁸ for modeling runoff from development project sites, sizing flow duration control structures, and determining overall compliance of such structures and other HM control structures (HM controls) in controlling runoff from the project sites to manage hydromodification impacts as described in the Permit. The adapted model is called the Bay Area Hydrology Model (BAHM).¹⁹ All Permittees may

¹⁸ http://www.ecy.wa.gov/programs/wq/stormwater/wwhm_training/wwhm/wwhm_v2/instructions_v2.html

¹⁹ See www.bayareahydrologymodel.org, Resources.

use the BAHM if its inputs reflect actual conditions at the project site and surrounding area, including receiving water conditions. As Permittees gain experience in designing and operating HM controls, the Programs may make adjustments in the BAHM to improve its function in controlling excess runoff and managing hydromodification impacts. Notification of all such changes shall be given to the Water Board and the public through such mechanism as an electronic email list.

The Contra Costa Permittees have developed sizing charts for the design of flow duration control devices. The Previous Permit allowed the Contra Costa Permittees to conduct a monitoring program to verify the performance of these devices and to identify whether streams to which Contra Costa Permittees discharge may have a different susceptibility to HM impacts, thus justifying a different threshold for control of flows resulting in those impacts. The Contra Costa Permittees submitted an IMP Monitoring Report,²⁰ which found that Contra Costa HM measures generally, but not entirely, met the Previous Permit's HM requirements for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. The Contra Costa Permittees did not submit information showing that Contra Costa creeks had a different susceptibility to erosion. That is, they did not submit a justification for using erosion thresholds different than those accepted for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. Under the Previous Permit, the Water Board had accepted a higher threshold for control of HM effects (i.e., controlling the range of flows beginning at 20% of the 2-year pre-project peak flow, as opposed to 10% of the 2-year pre-project peak flow). Because this additional information was not submitted, and Contra Costa streams are generally similar to other Bay Area streams, the Permit extends the 10% standard to Contra Costa, and includes requirements for Contra Costa to complete modifications to its HM approach to ensure that projects implement that consistent approach within a specified time.

The Previous Permit Provision C.3.g.v. required the City of Vallejo to complete a hydrograph modification management plan (HMP) by July 1, 2013, in lieu of complying with Previous Permit Provision C.3.g.i-iv. The City submitted its Final HMP on April 24, 2013,²¹ and the HMP was subsequently accepted by Board staff. The Final HMP incorporates the same requirements as for the Alameda, Santa Clara, and San Mateo Permittees. The Permit requires the City to comply with those requirements.

The Fairfield-Suisun Permittees are required to comply with the HM criteria established in this Permit. However, they have a threshold for control of erosive flows that is greater than the other Permittees: 20 percent of the 2-year peak flow. This criterion, which is greater than the criterion allowed for other Bay Area Stormwater Countywide Programs, is based on data collected from Laurel and LedgeWood Creeks and technical analyses of these site-specific data.

The Water Board recognizes that the collective knowledge of management of erosive flows and durations from new and redevelopment is evolving, and that the topics listed below are appropriate topics for further study. Such a study may be initiated by Water Board staff, or the Executive Officer may request that all Bay Region municipal

²⁰ Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report: IMP Model Calibration and Validation Project.

²¹ City of Vallejo (Geosyntec), April 2013. Final Hydromodification Management Plan (HMP).

stormwater Permittees jointly conduct investigations as appropriate. Any future proposed changes to the Permittees' HM provisions may reflect improved understanding of these issues:

- Potential incremental costs, and benefits to waterways, from controlling a range of flows up to the 35- or 50-year peak flow, versus controlling up to the 10-year peak flow, as required by this Permit;
- The allowable low-flow (also called Q_{cp} and currently specified as 10–20 percent of the pre-project 2-year runoff from the site) from HM controls;
- The effectiveness of self-retaining areas for management of post-project flows and durations; and/or
- The appropriate basis for determining cost-based impracticability of treating stormwater runoff and controlling excess runoff flows and durations.

Provision C.3.g.i. defines the subset of Regulated Projects that must install hydromodification controls (HM controls). This subset, called HM Projects, are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded by the conditions expressed in C.3.g.i.(1)-(3). Those conditions identify areas where the potential for single-project and/or cumulative development hydromodification impacts to creeks is minimal, and thus HM controls are not required. Such areas include creeks that are concrete-lined or significantly hardened (e.g., with concrete) from point of discharge and continuously downstream to their outfall into San Francisco Bay; underground storm drains discharging to the Bay; and construction of infill projects in highly developed watersheds.²² The Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees have developed maps showing where HM controls are required (Attachment C). This Provision requires Permittees that have not previously submitted an HM Applicability Map or equivalent information to prepare and submit that information, acceptable to the Executive Officer, consistent with the requirements of Provision C.3.g.

Provision C.3.g.ii. establishes the standard HM controls that all HM Projects must meet. The HM Standard is based largely on the standards proposed by Permittees in their Hydrograph Modification Management Plans. The method for calculating post-project runoff in regards to HM controls is standard practice in Washington State and is equally applicable in California.

Provision C.3.g.iii. provides a procedure for the Permittees to propose an additional method for demonstrating compliance with HM requirements. This method would directly simulate erosion potential, and would be required to ensure that projects implementing HM controls with this method, if accepted by the Executive Officer, meet the Permit's HM criteria. This provision requires submittal of appropriate analyses demonstrating that the method will substantively comply with HM requirements; it may not be implemented on projects until accepted by the Executive Officer.

²² Within the context of Provision C.3.g., "highly developed watersheds" refers to catchments or sub-catchments that are 70 percent impervious or more.

Provision C.3.g.iv. identifies and defines three methods of hydromodification management.

Provision C.3.g.v. establishes the timeframes for meeting the HM Standard defined in Provision C.3.g.ii.

Provision C.3.g.vi. describes the information required to be collected and/or submitted in the Permittees' Annual Reports regarding HM Projects. This Provision also describes specific required information for Contra Costa Permittees to submit with the 2017 Annual Report.

Provision C.3.h (Operation and Maintenance of Stormwater Treatment Systems) establishes permitting requirements to ensure that proper maintenance for the life of the Regulated Project is provided for all pervious pavement systems of 3,000 square feet or more; onsite, joint, and offsite stormwater treatment systems; and HM controls installed.

This Provision adds a requirement for Permittees to include pervious pavement systems of 3,000 square feet or more in their Operation and Maintenance Agreements, database of Regulated Projects, and inspection checklists. Pervious pavement systems serve as site design measures that directly reduce the amount of impervious surface area and therefore, the size of the stormwater treatment system(s) required to comply with Provision C.3.d. Adequate routine maintenance of pervious pavement systems is essential because clogged systems become impervious and may result in untreated stormwater runoff or additional load on stormwater treatment systems that result in inadequately treated stormwater runoff. To lessen the burden of inspecting so many pervious pavement systems, only those of 3,000 square feet or more are required to be inspected and patios for private-use at single-family homes, townhomes, or condominiums are specifically excluded. In the case of large subdivisions where the total pervious pavement system area is equal to or greater than 3,000 square feet, but the pervious pavement installations are on individual driveways that are less than 3,000 square feet, inspection of a representative number of driveways will suffice.

Provision C.3.h.ii.(6) The Previous Permit required Permittees to inspect at least 20% of all stormwater treatment systems annually, at least 20% of all vault-based systems annually, and every treatment system at least once every 5 years. Permittees have indicated that each inspection of a Regulated Project routinely includes inspection of pervious pavement systems, stormwater treatment systems and HM controls installed at the Project. Therefore, this Provision revises the inspection frequency requirements such that the minimum number of inspections required annually is tied to a percentage of the total number of Regulated Projects, instead of the total number of individual treatment systems and HM controls. This lessens the tracking burden for the Permittees and better reflects the way actual inspections are conducted.

This Provision requires each Permittee to inspect all its Regulated Projects at least once every 5 years and inspect an average of 20%, but no less than 15% of the total number of Regulated Projects annually. This requirement serves to prevent failed or improperly maintained pervious pavement systems, stormwater treatment systems, or

HM controls from going undetected until the 5th year. Neither of these inspection frequency requirements interferes with the Permittees' current ability to prioritize their inspections based on factors such as types of maintenance agreements, owner or contractor maintained systems, maintenance history, past compliance problems at certain Projects, etc.

Provision C.3.h.ii.(6)(d) This Provision allows Permittees to accept third party inspection reports for vault-based stormwater treatment systems in lieu of conducting Permittee inspections, but only if the third party inspections are conducted at least annually, which is the normal frequency for maintenance of these systems. Each third party inspection must be included in the database or tabular format required in Provision C.3.h.ii.(4) and (5) and clearly identified as a third party inspection. Each third party inspection report must document the third party inspection company, date of inspection, condition of the treatment unit(s) at the time of inspection, maintenance activities performed, and appearance of the inside of the vault units (with photos) before and after maintenance.

Provision C.3.h.ii.(7) As the number of Regulated Projects grows, the Permittees' O&M inspection programs must grow as well. Therefore, this Provision requires each Permittee to develop and implement an Enforcement Response Plan (ERP) for O&M inspections. The ERP serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. This Provision establishes minimum requirements for the ERPs. One of these requirements is that corrective actions must be implemented within 30 days after a problem is identified by an inspector. Thirty days is more than adequate time, considering that many of the problems identified in past O&M inspection reports have been lack of maintenance service or build-up of sediment or debris. The correction of such deficiencies should not take more than 30 days. This Provision also allows for greater than 30 days to complete permanent corrective actions, such as installing additional curb cuts and making grading or vegetation improvements.

Provision C.3.h.iv. This Provision sets the implementation dates for adding pervious pavement to Permittees' O&M programs and complying with the revised minimum inspection frequencies to July 1, 2016, so as to align with the Permittees' fiscal years. This allows time for the Permittees to revise their O&M programs and budget for the revisions. This Provision also specifies a July 1, 2017, due date for implementation of an ERP for the same reasons.

Provision C.3.h.v. As in the Previous Permit, this Provision requires the Permittees to maintain a database or equivalent tabular format with detailed information on each O&M inspection and any necessary enforcement actions against Regulated Projects. To lessen the burden of reporting, this Provision only requires summary data on inspections conducted each fiscal year to be reported in the Annual Report, instead of detailed information on each O&M inspection. However, upon request by the Executive Officer, detailed information from the database or tabular format must be submitted.

Provision C.3.i. (Required Site Design Measures for Small Project and Detached Single-Family Homes Projects) contains requirements on single-family home projects that create and/or replace 2,500 square feet or more of impervious surface and small development projects that create and/or replace > 2,500 ft² to <10,000 ft² impervious surface (collectively over the entire project). A detached single-family home project is defined as the building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development. This Provision requires these projects to select and implement one or more stormwater site design measures from a list of six. These site design measures are basic methods to reduce the amount and flowrate of stormwater runoff from projects and provide some pollutant removal treatment of the runoff that does leave the projects. Under this Provision, only projects that already require approvals and/or permits under the Permittees' current planning, building, or other comparable authority are regulated. Hence this Provision does not require Permittees to regulate small development and single-family home projects that would not otherwise be regulated under the Permittees' current ordinances or authorities. Water Board staff recognizes that the stormwater runoff pollutant and volume contribution from each one of these projects may be small; however, the cumulative impacts could be significant. This Provision serves to address some of these cumulative impacts in a simple way that will not be too administratively burdensome on the Permittees.

Provision C.3.j. (Green Infrastructure Planning and Implementation) requires Permittees to complete and implement a Green Infrastructure Plan (Plan) for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.

The Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff Total Maximum Daily Load (TMDL) wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is in lieu of expanding the definition of Regulated Projects prescribed in Provision C.3.b.ii. to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. However, subsequent permits may include different impervious surface thresholds or other criteria for Regulated Projects. The Plan also provides a mechanism to establish and implement alternative or in lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.ii.

Over the long term, the Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and

evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash and PCBs, mercury, and other pollutants. Permittees may comply with any requirement of this Provision through a collaborative effort.

Provision C.3.j.i.(1) This Provision requires each Permittee to prepare a framework or workplan that describes specific tasks and timeframes for developing its Green Infrastructure Plan. The framework or workplan is required to be approved by each Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This approval process provides assurance to the Water Board that Permittees are committed to the development of the Plan and implementation of green infrastructure.

Provision C.3.j.i.(2) This Provision specifies minimum elements that each Green Infrastructure Plan must contain to ensure that each Plan is robust and appropriately identifies the means and methods that each Permittee will employ to implement green infrastructure over time. These minimum elements (discussed below) are not overly prescriptive, so as to allow Permittees flexibility in developing their Plans.

- (a) A mechanism to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis. Implementation of these projects is required to be projected over the same timeframes as specified in Provisions C.11. and C.12. for assessing mercury and PCB load reductions because green infrastructure and projects are an acknowledged means of pollutant load reductions. Each Permittee has flexibility in choosing the mechanism as long as it includes criteria for prioritization and outputs that can be incorporated into its long-term planning and capital improvement processes.
- (b) Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the same timeframes as specified in Provisions C.11. and C.12. for assessing mercury and PCB load reductions. These self-determined targets represent the green infrastructure work that each Permittee has proactively identified will be completed beyond what would be completed in its community anyway.
- (c) A process for tracking and mapping completed projects, public and private, and making the information publicly available. Again, each Permittee has flexibility in what they use to comply with this Provision.
- (d) General guidelines and standard specifications for overall streetscape and project design and construction to ensure that projects have a unified, complete design that implements the range of functions associated with the projects. These

guidelines and standard specifications, while crucial to a Green Infrastructure Plan, already exist in many reference documents for green infrastructure design and are readily available.

- (e) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. In recognition of space and drainage constraints that may occur for public green infrastructure road projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects), this Provision allows Permittees to collectively propose a single approach for how to proceed should project constraints preclude fully meeting the C.3.d. sizing requirements. The single approach can include different options to address specific issues, constraints, or scenarios.
- (f) A summary of the planning documents the Permittee has updated or otherwise modified as well as how the Permittee will ensure that green infrastructure requirements will be included in future plans. The purpose of this element is to show that each Permittee is considering green infrastructure in all aspects of its urban planning.
- (g) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.
- (h) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, state, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

At U.S. EPA's request, Water Board staff has included at the end of this Fact Sheet section an outline of information used in part by MS4 permittees in the Los Angeles area in their preparation of watershed management plans. We recommend that Permittees consider this information as they prepare Green Infrastructure Plans.

Provision C.3.j.i.(5) requires each Permittee to document in its 2017 Annual Report that the framework or workplan for development of its Green Infrastructure Plan was approved by June 30, 2017, as required by Provision C.3.j.i.(1). This Provision also requires each Permittee to submit its Green Infrastructure Plan and documentation of the legal mechanisms to implement the Plan with the 2019 Annual Report. Based on other cities' past experiences in developing Green Infrastructure Plans, Water Board staff believes the deadlines specified provide adequate time for each Permittee to complete the framework or workplan as well as the Green Infrastructure Plan itself. Allowing the entire permit term to complete the Green Infrastructure Plans is too much time and prevents any of the Plans from being used by Board staff to inform the development of the MRP in the next permit term.

Provision C.3.j.ii.(1) requires each Permittee to prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation that have potential for green infrastructure measures.

Provision C.3.j.ii.(2) requires the list to be submitted with each Annual Report along with a summary of planning or implementation status for each public green

infrastructure project and each private green infrastructure project that is not also a Regulated Project under Provision C.3.b.ii. This Provision also requires each Permittee to include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, the Permittee is required to submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

The purpose of Provision C.3.j.ii. is to ensure that each Permittee is proactively developing green infrastructure projects and including green infrastructure elements into already planned infrastructure projects as much as possible, while the Green Infrastructure Plan is being developed.

Provision C.3.j.iii. requires the Permittees, individually or collectively, to track processes, assemble and submit information, and provide information, materials, and presentations as needed to assist relevant regional, state, and federal agencies to plan, design, and fund green infrastructure measures into local infrastructure projects, including transportation projects.

Provision C.3.j.iv. requires the Permittees, individually or collectively, to develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.

Attachment A to U.S. EPA's Comments on the May 11, 2015 Tentative Order Suggested Components of Green Infrastructure Plans

Outlined below are some potential ideas for Green Infrastructure (GI) plans to be developed by Bay Area permittees during MRP 2.0. Components provided below primarily arise from Los Angeles Regional Water Board guidance for reasonable assurance in watershed management plans as part of MS4 permit. Many components, but perhaps not all, will be applicable to GI plans for Bay Area. EPA encourages the Water Board to consider these ideas, modify as they deem appropriate, and include similar description of GI framework in the MRP 2.0 Fact Sheet. We recognize the continued partnership of MS4 permittees, the Water Board, EPA, and other stakeholders to discuss these ideas prior to inclusion into final GI plans.

- A. Identify the water quality priorities with watershed.
 - 1. Include any applicable required water quality milestones and compliance deadlines
 - 2. Describe watershed features, waterbodies any other relevant environmental setting information
 - 3. Outline other municipal specific goals to be addressed; e.g., flood risk, sea level protection, groundwater infiltration.
- B. Describe current BMPs and estimate existing pollutant loads
 - 1. List pollutant sources in watershed
 - 2. Provide map of major MS4 outfalls
 - 3. List any current BMPs within watershed (structural and non-structural)
 - 4. Using existing data (up to 10 yrs), give estimates of pollutant loads from watershed. (could be cone-based if no flow measurements available)
 - 5. Define on pollutant specific basis
 - 6. To extent data available and feasible, assess critical condition loads
 - 7. Describe variability of estimations.
- C. Estimate required pollutant load reductions
 - 1. To extent feasible, provide estimate of pollutant load reductions, if mass-based then calculate difference between current and allowable loads; if concentration- based then define the two values.
- D. Identify future control measures/BMPs/strategies to be implemented
 - 1. Describe drainage areas for implementation
 - 2. Identify control measures for stormwater and non-stormwater discharges; include number, location(s) and type; i.e., structural or non-structural controls, within new development, retrofit of existing development, stream/habitat restoration projects,
 - 3. Clarify pollutants to be addressed
 - 4. Define/map location of each control measure in watershed/jurisdiction
 - 5. Quantify upstream drainage area captured by each BMP
 - 6. Clarify if municipal effort only, private efforts or public/private projects
 - 7. Identify if project is within local jurisdiction or regional and describe cities involved.
- E. Provide schedule of implementation
 - 1. Identify interim milestones and dates for achievement (within this permit cycle)
 - 2. Identify all future and final dates for achievement

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3. Demonstrate that existing and future control measures will yield final pollutant load reductions and/or meet receiving water limits.
- F. Provide Pollutant Reduction Plan
1. Identify compliance points (should be consistent with any existing regulatory compliance locations; e.g., TMDL monitoring sites expected to assess compliance)
 2. Consider assessment locations in association with MS4 outfalls to monitor pollutant load responses due to upstream control measures.
 3. Describe and evaluate selected control measures - appropriate for pollutant and sizing for load capture
 4. Demonstrate selected control measures have reasonable assurance to meet interim/final requirements.
 5. Describe adaptive management process if pollutant milestones are not met and added BMPs are needed
 6. Include timeframe for future re-assessments.
- G. If model used, provide description of watershed model
1. Identify model type; e.g., watershed, receiving water, BMP performance, empirical
 2. Provide (minimum required) model components: input data, parameters, BMP performance parameters, output
 3. Describe model calibration acceptance criteria
 4. Describe efficiency for BMP performance parameters
 5. Demonstrate model outputs for existing pollutant loads will be addressed by combination of control measures/BMPs to achieve final milestones.
- H. Describe corresponding water quality monitoring program
1. Identify parameters of concern, all monitoring sites, sampling frequency (including wet and dry weather events)
 2. Clarify which monitoring sites are MS4 outfalls
 3. Briefly describe analytical methods and QA procedures to support monitoring
 4. Describe any future monitoring locations and anticipated timeframe of data collection
 5. Briefly describe pollutant sources upstream of monitoring sites.
- I. Identify post-implementation tracking assessment efforts
1. Once completed, describe the BMPs implemented, including any modifications from original project design
 2. Describe assessment procedures for evaluating effectiveness of control measure and corresponding pollutant load reductions for each implemented BMP, as necessary
 3. Provide schedule for re-evaluation of BMP load reductions over long term.

C.4. Industrial and Commercial Site Controls

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C) requires “[a] description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system.” Other specific legal authority is cited below.

Specific Provision C.4. Requirements

Provision C.4. has been revised from the Previous Permit so that related topics are grouped together better. A new Provision C.4.d. – Inspections has been created. It essentially consolidates, from the Previous Permit, the inspection requirements in Provision C.4.d. – Inspection Plan and Provision C.4.c. – Enforcement Response Plan.

Provision C.4.a (Legal Authority)

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Provision C.4.b (Inspection Plan)

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that Permittees must “identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.” The Permit continues to require Permittees to implement an industrial and commercial site controls program to reduce pollutants in runoff from all industrial and commercial sites/sources.

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that Permittees “[p]rovide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity.”

The Permit continues to require Permittees to identify various industrial sites and sources subject to the Industrial General Permit or other individual NPDES permit. U.S. EPA supports the municipalities regulating industrial sites and sources that are already covered by an NPDES permit:

Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system. It is anticipated that general or individual permits covering industrial storm water discharges to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well as other terms specific to the Permittee.²³

And:

Although today's rule will require industrial discharges through municipal storm sewers to be covered by separate permit, USEPA still believes that municipal operators of large and medium municipal systems have an important role in source identification and the development of pollutant controls for industries that discharge storm water through municipal separate storm sewer systems is appropriate. Under the CWA, large and medium municipalities are responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program.²⁴

This Permit does not require the Permittees to submit the list of facilities scheduled for inspection each year with annual reports. Instead, Permittees are to add each year's inspection list to the Inspection Plan as part of the annual update to the Inspection Plan. Permittees may choose to keep their annual lists in their databases or in electronic form. The annual lists must be made readily available to Water Board staff or its representatives upon request.

Water Board staff reviewed about 20% of the Permittees' Inspection Plans during the Previous Permit term. A few of those Inspection Plans also provide detailed flow charts or instructions on how to conduct inspections, fill out the inspect forms, execute enforcement actions, conduct follow-up, and fulfill tracking and reporting for the MRP. These comprehensive Inspection Plans help ensure inspection consistency and serve as excellent training documents for new inspection staff.

Provision C.4.c (Enforcement Response Plan) requires the Permittees to implement and update, as needed, their Enforcement Response Plan (ERP) that serves as a reference for inspection staff to take consistent and timely responses to actual or potential stormwater pollution problems discovered in the course of industrial/commercial stormwater inspections. The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for

²³ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48056

²⁴ *Ibid*

implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP. ERPs are unique to each Permittee. As such, this Permit continues to have broad requirements for the ERP. This allows the individual Permittee maximum flexibility to customize the ERP to fit its legal authority and the way it does business. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Short timeframes for implementing corrective actions encourage businesses to take care of the issues promptly, thus prevent mobilizing potential discharges. Permittees must also require immediate cessation of active non-stormwater discharges, timely implementation of corrective actions to clean up the discharge, and implementation of measures to prevent future active discharges.

This Permit standardizes and clarifies the ERP requirements in provisions C.4., C.5, and C.6. to eliminate any ambiguity in the requirements.

Provision C.4.d (Inspections) takes the inspection requirements from the Previous Permit's Provision C.4.b. Inspection Plan and C.4.c. ERP and consolidates them together into this Provision. Inspection frequencies are determined by each Permittee in its Inspection and Enforcement Response Plans.

U.S. EPA guidance states "management programs should address minimum frequency for routine inspections." The U.S. EPA Fact Sheet—Visual Inspection says "[t]o be effective, inspections must be carried out routinely."²⁵

Permittees have asked that this Permit reduce the record keeping and reporting requirements. The specific record keeping requirements are minimal information that needs to be recorded for each inspection and it is essential to document each inspection to develop a history for the facility. Water Board staff evaluations of MS4 programs showed that many Permittees have very comprehensive inspection database records. Annual reports need to provide enough information to show compliance. During the Previous Permit term, annual reports showed few violations for the corresponding number of inspections completed. This did not match with the field inspection experience of Water Board staff. Further investigation showed that some Permittees do not consider potential discharges to be violations.

The Previous Permit exempted verbal warnings from being reported in the annual reports. Water Board staff expected verbal warnings to have very limited use and only given for very minor issues that do not warrant anything in writing. However, from Water Board inspections, and annual report and ERP reviews, we concluded that many Permittees report minimal violations for the number of inspections completed because only observed non-stormwater discharges were considered violations and issued some type of written enforcement action. Potential discharges were all given verbal warnings and it was unclear if these potential discharges were corrected in a timely manner because there was no written documentation on the potential discharges or verbal warnings issued. Examples of potential discharges include housekeeping issues, evidence of actual non-stormwater discharges that are not ongoing during an inspection, lack of BMPs,

²⁵ U.S. EPA. 1999. 832-F-99-046, "Storm Water Management Fact Sheet – Visual Inspection."

inadequate BMPs, and inappropriate BMPs. Potential discharges need timely corrective actions.

Some Permittees feel that a 10-business day window to implement corrective action is not necessary and even unreasonable during the dry months for potential discharges and especially for minor potential discharges. Permittees have the discretion to add a rationale for allowing a longer time period, especially for corrective actions that require things such as capital improvements, revisions to standard operating procedures, and staff training. However, Water Board staff thinks that prompt implementation of corrective actions for most potential discharges minimizes the risk of potential discharges becoming actual discharges when things are knocked over, when the area is hosed with water, and/or during the next rain event. The Water Board staff has been told by a couple of Permittees that they prefer shorter corrective action timeframes because sites tend to take care of them right away versus forgetting about the corrective actions when given a longer corrective action timeframe. Throughout the Previous Permit term, Water Board staff asked Permittees for a list of minor potential discharges. The only minor issue listed was open dumpster/garbage can lids. Water Board staff concurred that open dumpster/garbage can lids is minor, can be corrected immediately, and would not require any additional follow-up. Water Board industrial and construction inspectors consider open dumpster/garbage can lids and small amounts of trash/debris on the ground to be minor violations that can quickly be corrected, because staff at the industrial or construction sites can immediately cover the dumpsters and pick up and appropriately dispose of the trash. Water Board inspectors note those issues and corrective actions in their inspection reports. This Permit now requires reporting of all potential and actual non-stormwater discharges based on the enforcement levels in each Permittee's ERP, so that Water Board staff can evaluate whether Permittees are conducting appropriate followup.

This Permit becomes effective half way through the 2015-2016 reporting year. The reporting requirements for this Permit are slightly different than the reporting requirements for the Previous Permit. In response to the Permittees commenting on the difficulties of reporting under two different permits, this Permit, C.4.d.iii.(1), continues the reporting requirements from the Previous Permit to the end of the 2015-2016 reporting year. The new reporting requirements, C.4.d.iii.(2), become effective the 2016-2017 reporting year.

Provision C.4.f (Staff Training) section of the Permit requires the Permittees to conduct annual staff trainings for inspectors. Trainings are necessary to keep inspectors current on enforcement policies and current MEP BMPs for industrial and commercial stormwater runoff discharges.

C.5. Illicit Discharge Detection and Elimination

Legal Authority

The following legal authority applies to section C.5:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) provides that the Permittee shall include in their application “the location of known municipal storm sewer system outfalls discharging to waters of the United States.”

Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(5) provides that the Permittee shall include in their application “[t]he location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall have adequate legal authority to “[p]rohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(F) provides that the Permittee shall have adequate legal authority to “[c]arry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires that the Permittee have a “description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires a “program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires a “description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires a “description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires a “description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) requires a “description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) requires a “description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.”

Fact Sheet Findings in Support of Provision C.5

- C.5-1** Illicit discharges that are not comprised entirely of stormwater are not authorized to enter the MS4 and are considered to be illicit discharges, unless authorized by a separate NPDES permit, or exempted or conditionally exempted in Provision C.15.
- C.5-2** Every Permittee must have the ability to effectively prohibit non-stormwater discharges to the MS4 by actively detecting and eliminating illicit discharges and disposal into its MS4.
- C.5-3** Illicit discharges to the storm drain system can be detected in several ways. Permittee staff can detect discharges during their course of other tasks, and business owners and other aware citizens can observe and report suspect discharges. The Permittee must have a direct means for these reports of suspected polluted discharges to the MS4 to be received, responded to in a timely manner, and to receive adequate documentation, tracking, and response through problem resolution.

Removal of Routine Collection System Screening Requirement

The Previous Permit required the Permittees to perform routine surveys for illicit discharges and illegal dumping in above ground check points in the collection system including elements that are typically inspected for maintenance purposes, such as end of pipes, creeks, flood conveyances, storm drain inlets, and catch basins, to seek and eliminate illicit connections and discharges. The results of the screenings were reported in annual reports. No illicit connections were reported. However, Permittees have found illicit discharges during the screenings and they were cleaned up. It is unclear if personnel conducting the screenings reported these illicit discharges to the illicit discharge staff for investigation and tracking. We have added language to C.5.c. – Spill, Dumping, and Complaint Response Program to ensure that illicit discharges found by municipal staff conducting routine maintenance and inspection activities on the collection system are reported to the illicit discharge staff for investigation and tracking. This is based on the federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3), which requires “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Specific Provision C.5 Requirements

Provision C.5.a (Legal Authority) requires each Permittee have adequate legal authority to prohibit illicit discharges to storm sewers as required by federal regulations at 40 CFR 122.26(d)(2)(i)(B). Illicit and inadvertent connections to MS4 systems result in a discharge into the MS4 that is not comprised entirely of stormwater. Every Permittee must have the ability to discover, inspect, enforce its ordinance, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

Provision C.5.b (ERP) requires Permittees to implement and update, as needed, their ERP to ensure consistent and timely response to illicit discharges and connections to the MS4. The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) follow-up inspection, (3) referral to another agency, (3) appropriate time periods for implementation of corrective actions, and (4) the roles and responsibilities of staff responsible for implementing the ERP. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Permittees must also require immediate cessation of active discharges, and timely implementation of corrective actions to clean up the discharge and implementation of measures to prevent future active discharges.

Water Board staff reviewed more than half of the Permittees' ERPs during the Previous Permit term. Almost all of those Permittees have one ERP to satisfy the ERP requirements in provisions C.4., C5., and C.6. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in the Previous Permit. Therefore, the ERP requirements in this Permit are standardized in provisions C.4., C5., and C.6.

Provision C.5.c (Spill, Dumping, and Complaint Response Program) Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer." This Provision of the Permit requires the Permittees to establish and maintain a central point of contact including phone numbers for spills, dumping, and complaints reporting. Reports from the public and other Permittee staff are an essential tool in discovering and investigating illicit discharge activities into the MS4. Maintaining contact points will help ensure that there is effective reporting to assist with the discovery of prohibited discharges. Each Permittee must have a means to adequately track the suspected polluted discharges from reporting through problem resolution.

Provision C.5.d (Tracking and Case Followup) section of the Permit requires Permittees to track and monitor followup for all incidents and discharges reported to the spills, dumping, and complaint response system that could discharge into the MS4. This requirement is included so Permittees can demonstrate compliance with the ERP requirements in Provision C.5.b and to ensure that illicit discharge reports receive adequate follow up through to resolution.

All municipalities, counties, district, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in California are

required to report sanitary sewer overflows to the California Integrated Water Quality System Project pursuant to the State Water Board's Order No. 2006-003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) and Order WQ 2013-0058-EXEC (Adopting Amended Monitoring Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems order. Sewage discharges that are reported to the California Integrated Water Quality System Project do not need to be tracked and reported in Provision C.5.

Provision C.5.e (Control of Mobile Sources) requires each Permittee to implement a program to reduce the discharge of pollutants from mobile businesses. The purpose of this section is to implement oversight and control of pollutants associated with mobile business sources to the MEP. The Previous Permit required Permittees to develop and implement a program to reduce the discharge of pollutants from mobile businesses. Water Board staff evaluated five Permittees' implementation of Provision C.5., which included Provision C.5.e. – Control of Mobile Sources. Water Board staff evaluated one Permittee in each of the five counties with Permittees covered under the Previous Permit. Three of the Permittees evaluated complied with this Provision. It was evident that they had put in the thought and actions to comply. Two of the Permittees evaluated did not comply with this Provision. They were dependent on the county-wide and/or regional programs to implement this Provision for them. The regional program was supposed to expand the existing regional Surface Cleaner Training and Recognition Program to include two new mobile business categories: automotive washing and carpet cleaning; develop marketing materials, training videos, and self-test applications for those two new mobile business categories; create Spanish tracks of the information for each new business type; and create a web-based application to share information about mobile businesses among the Permittees. At the time of the 2013-2014 Annual Report, none of those regional tasks had been completed. In order to understand what Permittees are doing to control pollutants from mobile sources, this Permit continues the requirements of the Previous Permit and collects data on each Permittee's implementation of the provision.

Provision C.5.f (Municipal Separate Storm Sewer System (MS4) Map) As part of the permit application process, federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) and 40 CFR 122.26(d)(1)(iii)(B)(5) specify that dischargers must identify the location of any major outfall that discharges to waters of the United States, as well as the location of major structural controls for stormwater discharges. A major outfall is any outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) or; for areas zoned for industrial activities, any pipe with a diameter of 12 inches or more or its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). The permitting agency may not process a permit until the applicant has fully complied with the application requirements.²⁶ If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.²⁷ All Permittees have complied with this requirement. This Permit

²⁶ 40 CFR 124.3 (applicable to state programs, see section 123.25).

²⁷ 40 CFR 122.26(d)(1)(iv)(E).

continues to require the Permittees to advertise the availability of the maps of their MS4 system and to make available these maps to the public upon request.

C.6. Construction Site Control

Legal Authority

The following legal authority applies to section C.6:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D) requires “[a] description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) requires “[a] description of procedures for site planning which incorporate consideration of potential water quality impacts.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) requires “[a] description of requirements for nonstructural and structural best management practices.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) requires “[a] description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) requires “[a] description of appropriate educational and training measures for construction site operators.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control, “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that “[t]he following categories of facilities are considered to be engaging in ‘industrial activity’ for the purposes of this subsection: [...] (x) Construction activity including cleaning, grading and excavation activities [...].”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.6.

- C.6-1** Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed the natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters.
- C.6-2** Excess sediment can cloud the water, reducing the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants, such as nutrients, metals, and oils and grease. Permittees are on-site at local construction sites for grading and building permit inspections, and also have in many cases dedicated construction stormwater inspectors with training in verifying that effective BMPs are in place and maintained. Permittees also have effective tools available to achieve compliance with adequate erosion control, such as stop work orders and citations.
- C.6-3** Mobilized sediment from construction sites can flow into the MS4 and then into receiving waters. According to the 2004 National Water Quality Inventory,²⁸ States and Tribes report that sediment is one of the top 10 causes of impairment of assessed rivers and streams, next to pathogens, habitat alteration, organic enrichment or oxygen depletion, nutrients, metals, etc. Sediment impairs 35,177 river and stream miles (14% of the impaired river and stream miles). Sources of sedimentation include agriculture, urban runoff, construction, and forestry. Sediment runoff rates from construction sites, however, are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades.²⁹

Specific Provision C.6 Requirements

Provision C.6.a. Legal Authority for Effective Site Management. Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) requires that each Permittee demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.” This section of the Permit requires each Permittee to have the authority to require year-round, seasonally and phase appropriate effective erosion control, run-on and runoff control, sediment control, active treatment systems, good site management, and non stormwater management through all phases of site grading, building, and finishing of lots. All Permittees should already have this authority.

²⁸ http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

²⁹ U.S. EPA. December 2005. *Stormwater Phase II Final Rule Fact Sheet Series – Construction Site Runoff Control Minimum Control Measure*. EPA 833-F-00-008. Fact Sheet 2.6.

In its Phase II Compliance Assistance Guidance, U.S. EPA says that “[i]nspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties.”³⁰ To issue warnings and assess penalties during inspections to achieve timely corrective actions from sites, inspectors must have the legal authority to conduct enforcement.

Provision C.6.b. Enforcement Response Plan (ERP). This section requires each Permittee to implement and update, as needed, its Enforcement Response Plan (ERP), which serves as a reference for inspection staff to take consistent actions and timely response to achieve effective, timely corrective compliance from all public and private construction site owners/operators.

U.S. EPA supports enforcement of ordinances and permits at construction sites, stating “[e]ffective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations.”³¹ In addition, U.S. EPA expects permits issued to municipalities to address “weak inspection and enforcement.”³² For these reasons, the enforcement requirements in this section have been established, while providing sufficient flexibility for each Permittee’s unique stormwater program. Prior to the issuance of the Previous Permit, Water Board staff had noted deficiencies in the Permittees’ enforcement procedures and implementation during inspections. The most common issues found were that enforcement was not firm and appropriate to correct the violation, and that repeat violations did not result in escalated enforcement procedures. Therefore, the Previous Permit required Permittees to develop ERPs.

The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP. ERPs are unique to each Permittee. As such, this Permit continues to have broad requirements for the ERP. This allows the individual Permittee maximum flexibility to customize the ERP to fit its legal authority and ordinary business practices. Permittees must require immediate cessation of active non-stormwater discharges, timely implementation of corrective actions to clean up the discharge, and implementation of measures to prevent future active discharges. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Construction sites are required by the statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction General Permit) to keep supplies on hand to address BMP issues rapidly. In a few cases, such as slope inaccessibility, it may require longer than 10 days before crews can safely access an eroded area. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. The Permittees’ tracking data needs to provide a rationale for the longer compliance timeframe.

³⁰ U.S. EPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, pp.4-31

³¹ U.S. EPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.

³² *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p.48058.

Water Board staff reviewed more than half of the Permittees' ERPs during the Previous Permit term. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in the Previous Permit. Therefore, this Permit standardizes and clarifies the ERP requirements in provisions C.4., C.5., and C.6. to eliminate any ambiguity in the requirements.

Provision C.6.c. Best Management Practices Categories. This section requires all Permittees to require all construction sites to have year-round seasonally appropriate effective BMPs in the following six categories: (1) erosion control, (2) run-on and runoff control, (3) sediment control, (4) active treatment systems, (5) good site management, and (6) non stormwater management. These BMP categories are listed in the Construction General Permit. The Water Board decided it was too prescriptive and inappropriate to require a specific set of BMPs that are to be applicable to all sites. Every site is different with regards to terrain, soil type, soil disturbance, and proximity to a waterbody. The Construction General Permit recognizes these different factors and requires site-specific BMPs through the (SWPPP), which addresses the six specified BMP categories. This Permit similarly allows Permittees the flexibility to determine if the BMPs for each construction site are effective and appropriate. This Permit also allows the Permittees and the project proponents the necessary flexibility to make immediate decisions on appropriate, cutting-edge technology to prevent the discharge of construction pollutants into storm drains, waterways, and rights-of-way. Appropriate BMPs for the different site conditions can be found in different handbooks and manuals. Therefore, this Permit is consistent with the Construction General Permit in its requirements for BMPs in the six specified categories.

Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff into the MS4, and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed the natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. This can even occur in conjunction with unexpected rain events during the dry season (defined as May 1 through September 30). Although rare, significant rains can occur in the San Francisco Bay Region during the dry season. Therefore, Permittees should ensure that construction sites have materials on hand for rapid rain response during the whole year, including during the dry season.

Normally, stormwater restrictions on grading should be implemented during the wet season from October 1 through April 30. Section C.6.c.ii.(1).d of the Permit requires "project proponents to minimize grading during the wet season and scheduling of grading with seasonal dry weather periods to the extent feasible." If grading does occur during the wet season, Permittees shall require project proponents to (1) implement additional BMPs as necessary, (2) keep supplies available for rapid response to storm events, and (3) minimize wet-season, exposed, and graded areas to the absolute minimum necessary.

Slope stabilization is necessary on all active and inactive slopes during rain events regardless of the season, except in areas implementing advanced treatment. Slope stabilization is also required on inactive slopes throughout the rainy season. These

requirements are necessary because unstabilized slopes at construction sites are significant sources of erosion and sediment discharges during rainstorms. “Steep slopes are the most highly erodible surface of a construction site, and require special attention.”³³ U.S. EPA emphasizes the importance of slope stabilization when it states “slope length and steepness are key influences on both the volume and velocity of surface runoff. Long slopes deliver more runoff to the base of slopes and steep slopes increase runoff velocity; both conditions enhance the potential for erosion to occur.”³⁴ In lieu of vegetation preservation or replanting, soil stabilization is the most effective measure in preventing erosion on slopes. Research has shown that effective soil stabilization can reduce sediment discharge concentrations up to six times, as compared to soils without stabilization.³⁵ Slope stabilization at construction sites for erosion control is already the consensus among the regulatory community and is found throughout construction BMP manuals and permits. For these reasons, Permittees must ensure that slope stabilization is implemented on sites, as appropriate.

It is also necessary that Permittees ensure that construction sites are revegetated as early as feasible. Implementation of revegetation reduces the threat of polluted stormwater discharges from construction sites. Construction sites should permanently stabilize disturbed soils with vegetation at the conclusion of each phase of construction.³⁶ A survey of grading and clearing programs found one-third of the programs without a time limit for permanent revegetation, “thereby increasing the chances for soil erosion to occur.”³⁷ U.S. EPA states “the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development.”³⁸

To ensure the MEP standard and water quality standards are met, active treatment systems may be necessary at some construction sites. Requirements for active system requirements are located in the Construction General Permit, Attachment F.

Provision C.6.d. Plan Approval Process. This section of the Permit requires the Permittees to review project proponents’ stormwater management plans for compliance with local regulations, policies, and procedures. U.S. EPA states that it is often easier and more effective to incorporate stormwater quality controls during the site plan review process or earlier.³⁹ In the Phase I stormwater regulations, U.S. EPA states that a primary control technique is good site planning.⁴⁰ U.S. EPA goes on to note that the most efficient controls result when a comprehensive stormwater management system is in place.⁴¹ To determine if a construction site is in compliance with construction and grading ordinances and permits, U.S. EPA states that the “MS4 operator should review

³³ Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out?* The Practice of Watershed Protection. p. 6.

³⁴ U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

³⁵ Schueler, T., and H. Holland. 2000. “Muddy Water In—Muddy Water Out?” *The Practice of Watershed Protection*. p. 5.

³⁶ *Ibid.*

³⁷ *Ibid.* p. 11.

³⁸ U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

³⁹ U.S. EPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 6.3.2.1.

⁴⁰ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.

⁴¹ *Ibid.*

the site plans submitted by the construction site operator before ground is broken.”⁴² Site plan review aids in compliance and enforcement efforts since it alerts the “MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities.”⁴³

Provision C.6.e. (Inspections) The Water Board allows flexibility on the legal authority language, ERP, and BMPs required on a site. This section of the Permit pulls together the accountability of the whole Provision through regular inspections, consistent enforcement, and meaningful tracking. These three elements will help ensure that effective construction pollutant controls are in place in order to minimize construction polluted runoff to the storm drain and waterbodies.

This section clearly identifies the level of effort necessary by Permittees to minimize construction pollutant runoff into storm drains and ultimately, waterbodies, including tracking and reporting sufficient to demonstrate and document Permittee compliance.

This section requires monthly inspections during the wet season of all construction sites disturbing one or more acre of land, all hillside projects, and all high priority sites determined by the Permittee or the Water Board to be significant threats to water quality. Inspections must focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six BMP categories. Each Permittee must implement its ERP and require timely corrections of all actual and potential problems observed. All corrective actions must be implemented before the next rain event, but no longer than 10 business days after the violations are discovered. A longer time period to implement corrective actions is allowed with a reasonable rationale. All inspections must be recorded on a written or electronic inspection form, and also tracked in an electronic database or tabular format.

The Previous Permit required Permittees to have the legal authority to require effective construction stormwater controls at all construction sites, regardless of the amount of soil disturbed. Water Board staff has observed disturbed construction sites where minimal BMPs were being implemented, and has seen stormwater transport construction site pollutants into the storm drain. For these reasons, ideally, all construction sites with a grading permit from a Permittee should have stormwater inspections during the rainy season to ensure adequate BMPs are implemented and construction pollutants are not entering the storm drain. Construction sites with steeper slopes pose a more-significant threat of discharging construction-related pollutants to the storm drain because they are likely to have higher runoff velocities and because their BMPs must be more robust and more-robustly installed and maintained in order to control pollutants, as compared to less-steep sites. Water Board staff has observed storm water move sediment and other construction-related pollutants into storm drains at sites ranging from those with flat slopes to those with slopes greater than 15%. Because of the relatively greater threat posed by steeper sites, this Permit adds a specific requirement to inspect all hillside projects disturbing greater than or equal to 5,000 square feet of soil. For those Permittees that do not have a hillside development

⁴² U.S. EPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4–30.

⁴³ *Ibid.* pp. 4–31.

map or definition, this Permit defines hillside development as development occurring on land with a slope greater than or equal to 15%.

The Previous Permit required Permittees to report the number of violations fully corrected prior to the next event, but no longer than 10 business days after the potential and actual discharges are discovered or otherwise considered corrected in a timely, though longer period. This proved challenging for many Permittees because they track enforcement actions and not discreet violations. While Water Board staff does want to understand how many potential and actual discharges are discovered and resolved in a timely manner, this would require significant changes in databases for some Permittees. The big picture of how many violations or enforcement actions for annual reporting will suffice, as inspection forms are available for more detailed review. Therefore, this Permit allows Permittees to either report by enforcement actions or discreet number of potential and actual discharges.

The Permittees asked that this Permit reduce the reporting since all of the tracking data are available to Water Board staff. This Permit reduces the reporting to what is minimally necessary to provide meaningful data and demonstrate permit compliance.

This Permit becomes effective half way through the 2015-2016 reporting year. The reporting requirements for this Permit are slightly different than the reporting requirements for the Previous Permit. In response to the Permittees commenting on the difficulties of reporting under two different permits, this Permit, Provision C.6.e.iii.(1), continues the reporting requirements from the Previous Permit to the end of the 2015-2016 reporting year. The new reporting requirements, C.6.3.iii.(3), become effective the 2016-2017 reporting year.

Provision C.6.f. Staff Training. This section of the Permit requires Permittees to conduct annual staff trainings for municipal staff. These trainings have been found to be extremely effective means to educate inspectors and to inform them of any changes to local ordinances and state laws. Trainings provide valuable opportunity for Permittees to network and share strategies used for effective enforcement and management of erosion control practices.

C.7. Public Information and Outreach

Legal Authority

The following legal authority applies to section C.7:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires “[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(5) requires “a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) requires “[a] description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

Fact Sheet Finding in Support of Provision C.7.

- C.7-1 An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues.
- C.7-2 An informed community also ensures greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.
- C.7-3 The public education programs should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.⁴⁴
- C.7-4 Target audiences should include (1) government agencies and officials to achieve better communication, consistency, collaboration, and coordination at the federal, state, and local levels and (2) K-12/Youth Groups.

⁴⁴ U.S. EPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.⁴⁵

Removal of Media Relations

The Previous Permit had specific requirements for Permittees to participate in or contribute to a media relations campaign. This Permit removes these specific requirements to allow Permittees more flexibility on how to conduct public outreach on different stormwater runoff pollution messages that they feel are most urgent. It is anticipated that Permittees will continue to use public service announcements, social media, and other free media as part of the public outreach required in Provision C.7.b.

Specific Provision C.7 Requirements

Provision C.7.a. Storm Drain Inlet Marking. Storm drain inlet marking is a long-established program of outreach to the public on the nature of the storm drain system, providing the information that the storm drain system connects directly to creeks and the Bay and does not receive treatment. Past public awareness surveys have demonstrated that this BMP has achieved significant impact in raising awareness in the general public and meets the MEP standard as a required action. Therefore, it is important to set a goal of ensuring that all municipally-maintained inlets are legible labeled with a no dumping message. If storm drain marking can be conducted as a volunteer activity, it has additional public involvement value.

Provision C.7.b. Outreach Campaigns. Permittees have long been implementing outreach campaigns to educate their residents on different stormwater runoff pollution prevention messages. The Permit requires a minimum of one public outreach campaign. It is anticipated that the Bay Area Stormwater Management Agencies Association (BASMAA) will continue implementing the *Our Water, Our World* pesticide use reduction outreach campaign. It is anticipated that individual Permittees, and/or their respective countywide program, and/or BASMAA, will either continue existing public outreach campaigns or start new ones. This Permit removes specificity regarding the expected public outreach campaigns and how they must be conducted. This recognizes that the Permittees have decades of public outreach experience and allows maximum flexibility to best reach their residents regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate the problems caused, and positively influence waste disposal practices and runoff pollution generation by encouraging the implementation of appropriate solutions. Permittees can utilize various electronic and print media, and paid and free media to best reach the different various target audiences. This Permit still requires an effectiveness assessment/evaluation after each outreach campaign. This provides the opportunity for the Permittees to evaluate whether they have best reached residents with the utilized stormwater pollution prevention messages in the outreach campaigns and how to move forward with future outreach campaigns.

Provision C.7.c. Stormwater Pollution Prevention Education. As the public becomes more aware of water quality issues and how certain behaviors negatively impact stormwater runoff, they will need more information on how to minimize stormwater

⁴⁵ U.S. EPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

pollution. The Previous Permit required Permittees to have and publicize a centralized stormwater point of contact to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives. The Permittees already disseminate numerous brochures, pamphlets, and fact sheets on a number of different stormwater pollution prevention messages which have a stormwater point of contact on them. Some Permittees also have these materials in other languages to reach their populations for whom English is not a first language. Many Permittees have also placed these pollution prevention materials on their websites. Since citizens increasingly use the internet to search for information, this Permit goes further to require all Permittees to place information on watershed characteristics and stormwater pollution prevention materials on their websites.

Provision C.7.d. Public Outreach and Citizen Involvement Events. This Permit combines Public Outreach and Citizen Involvement. Permittees need informed citizens to influence positive stormwater pollution behavior. Therefore, Permittees need to continue communicating with a broad spectrum of citizens with stormwater pollution prevention information through long-established outreach mechanism such as staffing tables or booths at fairs, street fairs, and other community events. Permittees shall continue utilizing appropriate outreach materials, such as printed materials, newsletter/journal articles, and videos. Permittees shall also utilize existing community outreach events, such as the Bringing Back the Natives Garden Tour. Combining Citizen Involvement Events with Public Outreach in this Permit does not minimize the importance of Citizen Involvement in events such as creek cleanups and restorations. It is important to provide opportunities for citizens to actively practice being good stewards of our environment. The combined specified numbers of events for Public Outreach and Citizen Involvement in this Permit are, for the most part, slightly less than the combined specified numbers in the Previous Permit. However, many Permittees claimed credit for both public outreach and citizen involvement for a number of events each year. In addition, this Permit has new requirements for each Permittee to have and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website and to advertise this website. It is anticipated that this website will provide the needed stormwater pollution prevention information to citizens more readily.

Provision C.7.e. Watershed Stewardship Collaborative Efforts. Watershed and Creek groups are comprised of active citizens, but they often need support from the local jurisdiction and certainly need to coordinate actions with Permittees such as flood districts and cities.

Provision C.7.f. School-Age Children Outreach. Outreach to school children has proven to be a particularly successful program with an enthusiastic audience who are efficient to reach. School children also take the message home to their parents, neighbors, and friends. In addition, they are the next generation of decision-makers and consumers.

Provision C.7.g. Outreach to Municipal Officials. It is important for Permittee staff to periodically inform Municipal Officials of the permit requirements and also future planning and resource needs driven by the permit and stormwater regulations.

C.8. Water Quality Monitoring

Legal Authority

Broad Legal Authority: CWA § 308; Federal NPDES regulations 40 CFR §§122.26(d)(2), 122.41(h), (j)-(l), 122.42(c), 122.44(i), and 122.48.

Specific Legal Authority: Permittees must conduct a comprehensive monitoring program and submit reports as required under Federal NPDES regulations cited above. CWC Section 13383 further authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

Fact Sheet Findings in Support of Provision C.8

C.8-1 In response to questions regarding the type of WQBELs that are most appropriate for NPDES stormwater permits, and because of the nature of stormwater discharges, U.S. EPA established the following approach to stormwater monitoring:

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.⁴⁶

According to U.S. EPA, the benefits of stormwater runoff monitoring include, but are not limited to, the following:

- Providing a means for evaluating the environmental risk of stormwater discharges by identifying types and amounts of pollutants present;
- Determining the relative potential for stormwater discharges to contribute to water quality impacts or water quality standard violations;
- Identifying potential sources of pollutants; and
- Eliminating or controlling identified sources more specifically through permit conditions.⁴⁷

C.8-2 Provision C.8 requires Permittees to conduct water quality monitoring, including ambient monitoring and monitoring of receiving waters, in accordance with 40 CFR 122.44(i) and 122.48. One purpose of water quality monitoring is to demonstrate the effectiveness of the Permittees' stormwater management actions pursuant to this Permit and, accordingly, demonstrate

⁴⁶ U.S. EPA. 1996. Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits. Sept. 1, 1996. <http://www.epa.gov/npdes/pubs/swpol.pdf>

⁴⁷ U.S. EPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

compliance with the conditions of the Permit. Other water quality monitoring objectives under this Permit include:

- Assess the chemical, physical, and biological impacts of urban runoff on receiving waters;
- Characterize stormwater discharges;
- Assess compliance with Total Maximum Daily Loads (TMDLs) and Wasteload Allocations (WLAs) in impaired waterbodies;
- Assess progress toward reducing receiving water concentrations of impairing pollutants;
- Assess compliance with numeric and narrative water quality objectives and standards;
- Identify sources of pollutants;
- Assess stream channel function and condition, as related to urban stormwater discharges;
- Assess the overall health and evaluate long-term trends in receiving water quality; and
- Measure and improve the effectiveness of the Permittees' urban runoff control programs and the Permittees' implemented BMPs.

C.8-3 Monitoring programs are an essential element in the improvement of urban runoff management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach, also called the "continuous improvement" approach, used to meet the Maximum Extent Practicable (MEP) standard where applicable. When water quality data indicate that water quality standards or objectives are not being met, particular pollutants, sources, and drainage areas can be identified and targeted for urban runoff management efforts. The iterative process in Provision C.1, Water Quality Standards Exceedances, could potentially be triggered by monitoring results. Ultimately, the results of the monitoring program must be used to focus actions to reduce pollutant loadings to comply with applicable WLAs, and protect and enhance the beneficial uses of the receiving waters in the Permittees' jurisdictions and the San Francisco Bay.

C.8-4 Under the CWA, NPDES permits must contain conditions that require both monitoring and reporting of monitoring results to ensure compliance. (See 33 U.S.C. § 1342(a)(2); 40 C.F.R. § 122.44(i)(1)-(2).) The regulations provide, in pertinent part:

In addition to the conditions established under §122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable.

(i) Monitoring requirements. In addition to § 122.48, the following monitoring requirements:

(1) To assure compliance with permit limitations, requirements to monitor:

(i) *The mass (or other measurement specified in the permit) for each pollutant limited in the permit;*

(ii) *The volume of effluent discharged from each outfall;*

(iii) *Other measurements as appropriate including pollutants in internal waste streams under § 122.45(i); pollutants in intake water for net limitations under § 122.45(f); frequency, rate of discharge, etc., for noncontinuous discharges under § 122.45(e); pollutants subject to notification requirements under § 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the CWA.*

(iv) *According to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter 1, subchapter N or O. . . .*

(2) *Except as provided in paragraphs (i)(4) and (i)(5) of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year. . . .*

*40 C.F.R. § 122.44(i)(1)-(2). This section allows “for monitoring other than mass or volume, namely some ‘other measurement specified in the permit [] for each pollutant limited in the permit.’” (NRDC v. U.S.EPA, No. 13-1745, 2015 WL 5780393 at *20 (2nd Cir. Oct. 5, 2015).) The regulations at 40 C.F.R. § 122.48 state that all permits specify the “[r]equired monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring.”*

Consistent with the federal regulations, water quality monitoring requirements in Provision C.8 require specific monitoring that will yield data that is both representative of the monitored activity and necessary to assure compliance with the requirements of the Permit, as described below.

C.8 requires monitoring⁴⁸:

(1) At or near outfalls during storm events to obtain flow-weighted concentrations (mass) of pollutants of concern. Flow-weighted monitoring is required to assess progress on attaining TMDLs, including assuring compliance with the required load reductions in the permit (C.8.f. Pollution of Concern Monitoring). This monitoring supports estimates of MS4 pollutant loads to receiving waters and requires data collection to support planning for control actions. The latter includes monitoring effectiveness of control measures and identifying pollutant source areas; and

⁴⁸ Provisions C.2-C.4, C.6, C.8, C.10, C.13-C.16 contain additional monitoring and reporting requirements to assure compliance with the requirements therein.

(2) *In receiving waters during wet and dry weather to assess the physical, chemical and biological impacts of MS4 discharges to urban streams (C.8.d. Creek Status Monitoring).*

Creek Status Monitoring requires receiving water monitoring of the types, frequencies and intervals sufficient to yield information on the physical, chemical and biological status of those water bodies. Receiving water monitoring is specified here in lieu of outfall monitoring for the following reasons. First, there are no end-of-pipe limits in the permit to measure. Instead, the permit requires, for example, PCB load reductions; outfall monitoring would not allow the Board to assess whether the PCB limits are met. Second, there are hundreds if not thousands of outfalls in the Permittees' jurisdictions and it is impractical to monitor every single outfall due to both cost and safety concerns. Monitoring a subset of outfalls would provide information about MS4 discharges at those specific locations at only one limited point in time, which leads to the third point that outfall monitoring is time- and spatially limited. In contrast, the required receiving water monitoring integrates the physical, biological and chemical effects to the water body of all MS4 discharges from multiple outfalls over multiple storms (i.e., time and space), yielding more useful data than outfall monitoring to determine compliance with the permit. Receiving water monitoring is done in a probabilistic or rotating basis, depending on the parameter, again yielding more useful data than fixed-location monitoring. Also, both dry weather and storm flows are addressed in receiving water monitoring, whereas outfall monitoring is normally conducted only during storm events. Dry weather discharges can constitute a significant portion of annual pollutant loadings from storm systems in urban areas (NRC 2008).

To provide an example of how receiving water monitoring better captures permit compliance, consider an illicit discharge of chloramine from a swimming pool to an MS4. Both outfall and receiving water monitoring could detect the discharge. However, outfall monitoring would need to be done at the exact location and time of an illicit discharge otherwise it would go undetected, because the discharge would have moved through the outfall and into receiving waters. In contrast, receiving water monitoring could detect chloramine for a longer period of time (depending on pH, organic carbon and temperature) from upstream outfalls to the point where dilution prevents detection. Chloramine can be fairly stable and could be detected in urban waters in summer months, when outfall monitoring is generally not conducted. Receiving water monitoring, which is required in both dry and wet weather, can and has detected chlorine (a break-down product of chloramine), leading to efforts to correct the illicit discharge problem.

Receiving water monitoring as a means to evaluate compliance with permit conditions is supported by the National Research Council (NRC). In *Urban Stormwater Management in the United States*, NRC states that the quality of stormwater from urbanized areas has been well-characterized.⁴⁹ Continuing

⁴⁹ National Research Council. 2008. *Urban Stormwater Management in the United States*.

MS4 end-of-pipe monitoring produces data of limited usefulness because of a variety of shortcomings (as detailed in the report). The NRC strongly recommends⁵⁰ that MS4 programs modify their evaluation metrics and methods to include biological and physical monitoring and an increased emphasis on watershed scale analyses to ascertain what is actually going on in receiving waters, much like what is required in the permit. Further, NRC finds that biological assessments (as required in the Permit) respond to the range of non-chemical stressors identified as being important in urban waterways including habitat degradation, hydrological alterations, and sediment and siltation impacts, as well as to the influence of nutrients and other chemical stressors where chemical criteria do not exist or where their effects are difficult to measure directly (e.g., episodic stressors).

U.S. EPA Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits notes that:

...storm water monitoring can be conducted for two basic reasons: 1) to identify if problems are present, either in the receiving water or in the discharge, and to characterize the cause(s) of such problems; and 2) to assess the effectiveness of storm water controls in reducing contaminants and making improvements in water quality.

Section C.8 of this permit satisfies these two objectives by requiring monitoring that will provide Permittees with sufficient data to pinpoint sources of pollutants and assess the effectiveness of efforts to reduce pollutants, both at the source and in receiving waters.

C.8-5 The Water Quality Monitoring Provision is intended to provide answers to fundamental management questions, outlined below. Monitoring is intended to progress as iterative steps toward ensuring that the Permittees' can fully answer, through progressive monitoring actions, management questions that include the following:

- Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
- What is the extent and magnitude of the current or potential receiving water problems?
- What is the relative urban runoff contribution to the receiving water problem(s)?
- What are the sources of urban runoff that contribute to receiving water problem(s)?
- Are conditions in receiving waters getting better or worse?

C.8-6 On April 15, 1992, the Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for San Francisco Bay. Subsequent to a public hearing and various meetings, Water

⁵⁰ U.S. EPA has endorsed the NRC's recommendation. (See, e.g., EPA's District of Columbia MS4 Permit No. DC0000221 Fact Sheet, 2011.)

Board staff requested major permit holders in the Region, under authority of CWC section 13267, to report on the water quality of the Estuary. These permit holders, including the Permittees, responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Estuary Regional Monitoring Program (RMP). The RMP involves collection and analysis of data on pollutants and toxicity in water, sediment and biota of the Estuary. Because the RMP monitors waters in each Permittee's jurisdiction and gathers data on the pollutants discussed in this Permit, the Permittees are required to continue to report on the water quality of the Estuary, as presently required. Compliance with the requirement through participation in the RMP is considered to be adequate compliance.

C.8-7 The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout California. One purpose of SWAMP is to integrate existing water quality monitoring activities of the State Water Board and the Regional Water Boards, and to coordinate with other monitoring programs. Provision C.8 contains a framework, referred to as a regional monitoring collaborative, within which Permittees can elect to work cooperatively with SWAMP to maximize the value and utility of both the Permittees' and SWAMP's monitoring resources. In working cooperatively with SWAMP, Permittees can develop a monitoring program that evaluates waters in its jurisdiction and gathers data on each of the pollutants of concern discussed in this Permit.

C.8-8 In 1998, BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,⁵¹ a document describing a possible strategy for coordinating the monitoring activities of BASMAA member agencies. The document states:

BASMAA's member agencies are connected not only by geography but also by an overlapping set of environmental issues and processes and a common regulatory structure. It is only natural that the evolution of their individual stormwater management programs has led toward increasing amounts of information sharing, cooperation, and coordination.

In the Previous Permit, Permittees were given the option to implement this same concept by forming a regional monitoring collaborative, which they did. In conducting some of the monitoring required in this Provision, the Regional Monitoring Collaborative (RMC) provides efficiencies and economies of scale by performing certain tasks (e.g., planning, contracting, data quality assurance, data management and analysis, and reporting) at the regional level on behalf of

⁵¹ EcoAnalysis, Inc. & Michael Drennan Assoc., Inc., *Support Document for Development of the Regional Stormwater Monitoring Strategy*, prepared for Bay Area Stormwater Management Agencies Association, March 2, 1998.

all Permittees. Further benefits are expected as more monitoring requirements are fulfilled through the RMC.

C.8-9 This Permit includes monitoring requirements to verify compliance with adopted TMDL WLAs and to provide data needed for TMDL development and/or implementation. This Permit incorporates the TMDLs' WLAs adopted by the Water Board as required under CWA section 303(d).

C.8-10 SB1070 (California Legislative year 2005/2006) found that there is no single place where the public can go to get a look at the health of local water bodies. SB1070 also states that all information available to agencies shall be made readily available to the public via the Internet. This Permit requires water quality data to be submitted in a specified format and uploaded to a centralized Internet site so that the public has ready access to the data.

Specific Provision C.8 Requirements

Each of the components of the monitoring provision is necessary to meet the objectives and answer the questions listed in the findings above. Justifications for each monitoring component are discussed below.

Provision C.8.a. Compliance Options. Provision C.8.a. provides Permittees options for obtaining monitoring data through various organizational structures, including use of data obtained by other parties. This is intended to achieve the following:

- Promote cost savings through economies of scale and eliminate redundant monitoring by various entities;
- Promote consistency in monitoring methods and data quality; and
- Simplify reporting.

In this Permit, all the Stormwater Countywide Programs are encouraged to work collaboratively to conduct all or most of the required monitoring and reporting on a region-wide basis. For each monitoring component that is conducted collaboratively, one report would be prepared on behalf of all contributing Permittees; separate reports would not be required from each Program. Cost savings could result also from reduced contract and oversight hours, fewer quality assurance/quality control samples, shared sampling labor costs, and laboratory efficiencies.

Provision C.8.b. Monitoring Protocols and Data Quality. Clean Water Act regulations (40 CFR 122.41(j)(1)) require that data submitted pursuant to a NPDES permit meet certain quality standards. To achieve this, and to obtain data of known quality that can be compared to data collected in other California urban creeks, the permit requires monitoring data be collected and analyzed in accordance with the SWAMP Quality Assurance Project Plan and Standard Operating Procedures or U.S. EPA methods. The BASMAA Regional Monitoring Coalition's Creek Status Monitoring Program Quality Assurance Project Plan (January 2014) and Standard Operating Procedures (January 2014) have been deemed to be SWAMP comparable. These two BASMAA documents may be updated to reflect the changing state-of-the-science with Executive Officer's approval.

Provision C.8.c. San Francisco Estuary Receiving Water Monitoring. The San Francisco Estuary is the ultimate receiving water for most of the urban runoff in this region. For this reason and because of the high value of its beneficial uses, Provision C.8.c requires focused monitoring on the Estuary to continue. Since the mid-1990s, Permittees have caused this monitoring to be conducted by contributing financially and with technical expertise, to the RMP. Provision C.8.c requires such monitoring to continue.

Provisions C.8.d. Creek Status Monitoring. Based on the stated goals of the CWA, Creek Status Monitoring employs a three-pronged approach to monitoring water quality which includes chemical-specific monitoring, toxicity testing, and bioassessments (U.S. EPA 1991a). Each of the three elements has distinct advantages and all three work together to ensure that the physical, chemical and biological integrity of our waters are protected. Creek Status Monitoring includes probabilistic and targeted sampling of urban creeks and serves as a surrogate to monitoring the discharge from all major outfalls. Sampling the Permittees' numerous outfalls is impractical due to costs and safety factors and the resulting data would not provide commensurately better information. By sampling the sediment, biota and water column in urban creeks, the Permittees can determine where water quality problems are occurring in the creeks, then work to identify which outfalls and land uses are causing or contributing to the problem. In short, Creek Status Monitoring is needed and useful for identifying water quality problems and assessing the health of streams; it is the first step in identifying sources of pollutants and an important component in evaluating the effectiveness of an urban runoff management program. Requirements for number, frequency and general locations of samples are established to sufficiently indicate whether water quality is supportive, or likely to be supportive, of beneficial uses and whether water quality objectives are being met, at a minimum.

Provision C.8.d.i. Biological Assessment including Nutrients and General Water Quality Parameters. Biological Assessment is needed to provide site-specific information about the health and diversity of freshwater benthic communities within a specific reach of a creek, using standard procedures developed and/or used by the SWAMP. It consists of collecting samples of benthic communities and conducting a taxonomic identification to measure community abundance and diversity. Urban creek sampling can be directly compared to a non-urban or reference creek to assess benthic community health. Biological indicators, including the California Stream Condition Index (CSCI), are developed using reference streams, so the calculation of a CSCI score at an urban site already takes comparison to reference conditions into account. This monitoring can also provide information on cumulative pollutant exposure/impacts because pollutant impacts to the benthic community accumulate and occur over time. Nutrient monitoring is necessary because recent monitoring data indicate nutrients, which can increase algal growth and decrease dissolved oxygen concentrations, are present in significant concentrations in Bay Area creeks. The sampling timeframe (generally between April 15 and June 30) is when invertebrates are developed enough to be captured in the sampling equipment but not developed enough to have emerged (flown off), and thus is the timeframe in which necessary information concerning biological integrity can be obtained.

Provision C.8.d.ii. Chlorine monitoring is needed to detect a release of potable water or other chlorinated water sources, which are toxic to aquatic life.

Provision C.8.d.iii. Temperature monitoring is needed to determine if conditions in creeks to which urban runoff is discharged are supportive of cold-water and warm-water beneficial uses, as appropriate.

Provision C.8.d.iv. Continuous monitoring of dissolved oxygen, temperature, and pH is required because these parameters are fundamental to supporting aquatic life beneficial uses and they impact the effect of pollutants in freshwater (e.g., ammonia toxicity is dependent on pH and temperature).

Provision C.8.d.v. Pathogen Indicator monitoring is needed to detect pathogens in waterbodies that could be sources of impairment to recreational uses at or near the sampling location.

Provision C.8.d. (All Parameters) Monitoring Frequency, Duration, and Location. Creek Status Monitoring continues to be an annual requirement for the Permittees, except for two much smaller Permittees, Fairfield-Suisun and Vallejo. For each of the Creek Status Monitoring parameters, the number or frequency of samples required is based on the relative population within the countywide stormwater program. Costs are minimized while data necessary for successful stormwater management are obtained. Monitoring durations are based on the amount of data needed to understand the potential effects related to each Creek Status Monitoring parameter. Monitoring frequencies and durations are specified for each parameter.

Creek Status Monitoring locations are to be selected on a probabilistic (random) or targeted basis, depending on the parameter, in similar fashion to SWAMP. If correctly sited, sampling stations are expected to be very useful in answering the monitoring program's management questions and meeting its goals. For this reason, Provision C.8.d. requires sample locations to be based on surrounding land use, likelihood of urban runoff impacts, existing data gaps, and similar considerations. This will help maximize the utility of the sample locations, while also providing the Permittees with adequate flexibility to ultimately choose practical Creek Status Monitoring locations.

Provision C.8.e. Stressor/Source Identification (SSID) Projects are necessary to identify sources of pollutants; identify new or emerging pollutants; and improve stormwater management actions. When Creek Status Monitoring results indicate an exceedance of a water quality objective, a temperature or toxic effect threshold, or other "trigger," these results become candidates for SSID projects. The trigger provides a threshold for considering follow up, and Permittees select which results will be followed up on via a SSID project based on criteria such as magnitude of threshold exceedance; parameter (for a variety of parameters); and likelihood stormwater management action(s) could address the exceedance. A minimum number of SSID Projects is required, rather than a SSID for every monitoring result that exceeds a "trigger" threshold. Every trigger exceedance need not result in a SSID project because (1) triggers are not water quality objectives in most cases and (2) this approach requires investigation of potential water quality issues without duplicating efforts.

Through SSID projects, Permittees must identify the source of the problem and take steps to reduce any pollutants discharged from or through their municipal storm sewer systems. This requirement conforms to the process, outlined in Provision C.1., of complying with the Discharge Prohibition and Receiving Water Limitations. The timeframes for initiating and completing follow-up actions acknowledge the realities of budgeting for these studies, some, but not all of which could require funding above the level available in a given fiscal year. If multiple “triggers” are identified through monitoring, Permittees must focus on the highest priority problems; a cap on the total number of source identification projects conducted within the Permit term is provided to cap Permittees’ potential costs.

C.8.f. Pollutants of Concern⁵² Monitoring. CWA section 303(d) TMDL requirements, as implemented under the CWC, require a monitoring plan designed to measure the effectiveness of the TMDL point and nonpoint source control measures and the progress the water body is making toward attaining water quality objectives. Such a plan necessarily includes collection of water quality data. Provision C.8.f. Pollutants of Concern (POC) monitoring is intended to assess inputs of Pollutants of Concern to the Bay from local tributaries and urban runoff; provide information to support implementation of TMDLs and other pollutant control strategies; assess progress toward achieving wasteload allocations (WLAs) for TMDLs; and help resolve uncertainties in loading estimates and impairments associated with these pollutants.

In particular, POC monitoring addresses five priority POC management information needs:

- 1) Source Identification - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
- 2) Contributions to Bay Impairment - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
- 3) Management Action Effectiveness - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;
- 4) Loads and Status - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and
- 5) Trends - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.

The Permit specifies monitoring methods that can be used to address these information needs and which information needs apply to each pollutant of concern. The Permit provides flexibility in the number of samples, or level of effort, but requires minimums to be met annually and over the Permit term. The level of effort (expressed as required number of samples collected and analyzed) is similar to the level of sampling and analysis effort for pollutants of concern monitoring required in the Previous Permit term.

⁵² See sections C.9, C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

The approach for POC monitoring does not specify specific monitoring locations or monitoring frequencies at those specific locations. Rather, the Permit requires that monitoring be intelligently and flexibly directed toward answering the management information needs (that apply to a given pollutant), and this flexibility allows the monitoring strategy to be adapted and improved based on information obtained from monitoring conducted early in the permit term. The flexibility also allows the Permittees to continue collecting useful information even during drought years in which conditions limit some types of data collection (e.g., storm even sampling) but not others (e.g., collection of bed sediment). As is true of Creek Status Monitoring, it is impractical to sample all of the urban runoff outfalls in the region, and these outfall data (obtained at great expense) would not provide commensurately better information relative to the management information needs for pollutants of concern. By strategically sampling the sediment and water column in urban creeks and conveyances, the Permittees can better address the five information needs stated above.

To some extent, POC monitoring builds on what we already know about pollutants in creeks (also referred to as tributaries to the Bay) and leads to more effective actions to control those pollutants. For example, we know that pesticide-related toxicity has been widespread and results from approved pesticide uses. POC monitoring for toxicity therefore is tailored to provide information on which pesticides are currently a concern to water quality; a limited number of toxicity samples provides adequate information. Other requirements for number, frequency and general locations of samples are similarly tailored to information needs.

Provisions C.8.g. Pesticides and Toxicity Monitoring. Toxicity testing provides a tool for assessing toxic effects (acute and chronic) of all the chemicals in samples of stormwater, receiving waters or sediments and allows the cumulative effect of the pollutants present in the sample to be evaluated, rather than the toxic responses to individual chemicals. Toxicity in water and on sediment also are monitored in order to determine whether the numeric targets of the Diazinon and Pesticide-Related Toxicity in Urban Creeks TMDL are being achieved, and to help provide evidence on whether pesticide-related toxicity is decreasing in urban creek waters.

This subprovision combines all the pesticide and toxicity into one place, where previous permits had pesticide and toxicity monitoring in both Creek Status and Pollutants of Concern Monitoring subprovisions. This format is intended to provide for more thoughtful dry weather and wet weather sampling designs that may provide more meaningful data for the region and potentially for statewide studies. Since the Urban Creeks TMDL was adopted by the Water Board in 2005, it has become more apparent that pesticide related toxicity water quality problems are similar in urban waterways across the State. At this time, efforts have begun to develop a statewide coordinated pesticides and pesticide-related toxicity monitoring program. In addition, pesticide-related water quality issues are subject to change as different pesticide products gain market share and increase in urban usage. For these reasons, Permittees may request the Executive Officer modify, reduce or eliminate the requirements of this subprovision during the permit term, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

This Permit describes type, interval and frequency of pesticides and toxicity monitoring sufficient to yield data which are representative of both dry weather and wet weather urban runoff. Required analytes include toxicity and pesticides that are being found at or near concentrations that cause chronic or acute effects to aquatic organisms. Required test methods include the relatively recent Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136) for chronic toxicity. The test species are selected as the most sensitive species to pollutants currently known or suspected to be present in stormwater discharges. All required methods and test species are consistent with those used by SWAMP as well as those required in other California MS4 permits, including the statewide Caltrans permit.

The non-pesticide pollutants arsenic, cadmium, chromium, copper, lead, nickel, and zinc are included in this subprovision in order to facilitate the synoptic collection of these pollutants in sediment with toxicity in sediment during the dry season.

C.8.h. Reporting. CWC section 13383 provides authority for the Water Board to require technical water quality reports. Provision C.8.h. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements; (2) provide information useful in evaluating compliance with all Permit requirements; (3) enhance public awareness of the water quality in local streams and the Bay; and (4) standardize reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.14. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.14 pertain to pollutants of concern, including those for which TMDLs have been adopted.

Legal Authority

The following legal authority applies to provisions C.9 through C.14:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13383, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The TMDL-based requirements for pesticides, mercury, PCBs, and bacteria have been imposed in accordance with 40 Code of Federal Regulations section 122.44(d)(1)(vii)(B). Pursuant to 40 Code of Federal Regulations section 122.44(d)(1)(vii)(B), the effluent limitations for NPDES permits must be consistent with the assumptions and requirements of any available Waste Load Allocation (WLA) for the discharge prepared by the state and approved by U.S. EPA, or established by U.S. EPA. In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement any relevant water quality control plans (basin plans), including TMDL requirements that have been incorporated into the basin plans. In addition, under CWA section 402(p)(3)(B)(iii), MS4 discharges “shall require controls to reduce the discharge of pollutants to the maximum extent practicable . . . and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.” (33 U.S.C. § 1342(p)(3)(B)(iii).) Under this provision, the Water Board may include requirements for reducing pollutants in stormwater discharges as necessary for compliance with water quality standards. (*See Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.) This includes requirements to meet TMDLs since TMDL targets are an interpretation of water quality standards.

The Water Board may impose WQBELs effluent limitations that are BMPs or numeric effluent limitations. (33 U.S.C. §1342(p)(3)(B)(iii); 40 C.F.R. §122.44(k)(2)&(3) and § 122.44(d)(1)(vii)(B).) This is consistent with U.S. EPA’s November 26, 2014, “Revision to the November 22, 2002, Memorandum ‘Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs’” (2014 U.S. EPA Memo.) This memorandum, while not binding authority, states “[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA.” The 2014 U.S. EPA Memo further acknowledges that the permitting authority should consider the schedules in the TMDL as it decides whether and how to establish enforceable interim requirement and interim dates in the Permit. The interim deadlines in the Provisions are consistent with and in furtherance of the deadlines in the TMDLs.

For trash, the Water Board is authorized to impose effluent limitations under 40 CFR 122.44(d)(1)(i), which requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” Trash is being discharged at levels that cause an excursion above the water quality objectives for floating, settleable and suspended materials. For copper, the Permit requires best management practices and copper control measures to prevent urban runoff discharges from causing or contributing to exceedances of copper site-specific water quality objectives for the Bay, consistent with the Basin Plan. Water Code section 13263 requires that waste discharge requirements implement the Basin Plan.

Basin Plan Requirements: Section 4.8 of the Region’s Water Quality Control Plan (Basin Plan) states that NPDES stormwater permits issued to municipalities will include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. The Water Board has been taking a phased approach of first requiring technically and economically feasible controls to reduce pollutant discharges to the maximum extent practicable. Where this does not result in attainment of water quality objectives, the Basin Plan states the Water Board will require implementation of additional control measures to meet water quality objectives. The Basin Plan also contains urban stormwater TMDL implementation requirements at sections 7.1.1, 7.2.2, 7.7.1, 7.2.3, and 7.4.1 for pesticide-related toxicity, mercury, PCBs, and bacteria. The Basin Plan also requires urban stormwater requirements for copper in section 7.2.1. Finally, the Basin Plan Table 4-1 includes Prohibition 7, which prohibits the discharge of “rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.”

General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)

The control measures for mercury are intended to implement the urban runoff requirements stemming from TMDLs for these pollutants. The control measures required for PCBs are intended to implement those that are consistent with control measures in the PCBs TMDL implementation plan. The urban runoff management requirements in the PCBs TMDL implementation plan call for permit-term requirements based on an implementation of controls to reduce PCBs, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing PCBs and mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides, PBDEs, and others. The strategy for these pollutants is to use PCBs control to guide decisions concerning where to focus effort, but implementation of the control efforts would take into account the benefits for controlling other pollutants of concern. The POC strategy also includes a phased approach that provides for pilot scale testing (in the 2009 issuance of this permit) and for identifying areas with POC sources. The overall strategy for addressing sediment bound POCs includes the following modes:

1. Pilot-testing in a few specific locations.

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2. Focused implementation in areas where benefits are most likely to accrue.
 3. Full-scale implementation throughout the region.
 4. Other: This may refer to experimental control measures, Research and Development, desktop analysis, laboratory studies, and/or literature review.

The logic of such categorization is that, as actions are tested and confidence is gained regarding the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during a permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. Conversely, the benefits of other control measures may be well known, and these control measures should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering additional information about effectiveness and cost, we will advance our understanding and be able to perform an updated assessment of the suite of actions.

During the Previous Permit term, a large part of the effort was focused on gathering necessary information about control measure effectiveness. In effect, most of the control measures were implemented at the pilot scale. In this Permit term, the emphasis will shift toward focused and perhaps full-scale implementation of the most effective control measures, and progress will be measured through accounting for specific load reductions. In subsequent permit terms control measures will be implemented on the basis of what we learn in this term, and we will, thus, achieve iterative refinement and improvement through time.

Background on Specific Provisions: Pursuant to CWA § 402(p)(3)(B)(ii)-(iii) and 40 CFR § 122.44(d)(1)(vii)(B), Provisions C.9 through C.14 contain technology-based requirements to control pollutants to the MEP, such other provisions the Water Board has determined appropriate for the control of pollutants under CWA, water quality-based requirements consistent with the assumptions and requirements of any WLAs in the applicable TMDLs, and requirements to effectively prohibit non-stormwater discharges into storm sewers. Provision C.9 contains requirements to implement the TMDL for pesticide-related toxicity in urban creeks. Provision C.10 contains requirements to implement narrative water quality objectives related to trash in all receiving water. Provision C.11 contains requirements to implement the San Francisco Bay mercury TMDL WLAs and the TMDL WLAs for mercury in the Guadalupe River Watershed. Provision C.12 contains requirements to implement the San Francisco Bay PCBs TMDL WLAs. Provision C.13 contains requirements to implement the copper site-specific objectives for San Francisco Bay. Provision C.14 contains requirements to implement the TMDL WLAs for San Pedro Creek and Pacifica State Beach Bacteria.

C.9. Pesticides Toxicity Control

Fact Sheet Findings in Support of Provision C.9

- C.9-1** This Permit implements the Basin Plan amendments adopted by the Water Board that establish a Water Quality Containment Strategy and TMDL for diazinon and pesticide-related toxicity for Bay Area urban creeks on November 16, 2005, and approved by the State Water Board on November 15, 2006. The Water Quality Containment Strategy requires urban runoff management agencies to minimize their own pesticide use, conduct outreach to others, lead monitoring efforts, and take actions related to pesticide regulatory programs. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff.
- C.9-2** The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations.
- C.9-3** This provision is consistent with 2014 U.S. EPA Memo⁵³ providing guidance on implementing TMDL WLAs in NPDES storm water permits. Specifically, this provision establishes clear actions to achieve pesticide load reductions as well as other requirements (see C.9.f) necessary to achieve receiving water limits. The timeline for achieving the TMDL is not a fixed date for the following reasons. Pesticide-related toxicity continues to occur because state and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. The TMDL implementation plan recognizes that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and state law; and (2) because a realistic date for achieving allocations cannot be discerned given the current pesticide regulatory framework, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline.

Specific Provision C.9 Requirements

C.9 provisions implement the TMDL for Urban Creeks Pesticide Toxicity. All C.9 provisions are stated explicitly in the implementation plan for this TMDL. Permittees are encouraged to coordinate activities with the Urban Pesticide Committee and other agencies and organizations. The Urban Pesticides Committee has served as an information clearinghouse and as a forum for coordinating pesticide TMDL implementation. The list of urban-use pesticides of concern to water quality includes

⁵³ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

pesticides for which local area monitoring data exceed or approach benchmarks and pesticides currently linked to toxicity in surface waters.

Provisions C.9.a through C.9.d are designed to insure that integrated pest management (IPM) is adopted and implemented as policy by all municipalities. IPM is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. If implemented properly, it is an approach that can significantly reduce or eliminate the use of pesticides. The implementation of IPM will be assured through training of municipal employees and contractor requirements.

Provision C.9.e directs the municipalities to conduct outreach to consumers at point of purchase, to residents who contract for pest control, and to pest control professionals. Such targeted outreach is often intended to make the public and pest control professionals aware of the water quality impacts of current-use pesticides that are impacting or have potential to negatively impact urban creeks.

Provision C.9.f requires that municipalities (through cooperation or participation with BASMAA and CASQA_track and participate in pesticide regulatory processes like the U.S. EPA pesticide evaluation and registration activities related to surface water quality, and the California Department of Pesticide Regulation pesticide evaluation activities. The goal of these efforts is to provide pertinent water quality data and encourage both the state and federal pesticide regulatory agencies to fully evaluate aquatic impacts and to mitigate for impacts to urban water bodies within the pesticide regulation or registration process. Accomplishing this goal would represent the most efficient and effective means to prevent pesticide-related water quality problems in the future.

Provision C.9.g requires Permittees to evaluate the effectiveness of their pesticide source control actions and is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the Permit. The particulars of assessment will depend on the nature of the control measure.

C.10. Trash Load Reduction

Legal Authority

The following legal authority applies to section C.10:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13383, 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), 40 CFR 122.26(d)(2)(iv) , and 40 CFR § 122.44(d)(1)(i).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(i) requires “a demonstration that the [Permittee] can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the [Permittee] at a minimum to . . . (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A)(1) requires “a description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires “a description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR § 122.44(d)(1)(i) requires limitations for pollutants which are or may be discharged at a level which has the reasonable potential to cause or contribute to an excursion above any water quality standard, including any narrative criteria for water quality.

San Francisco Bay Basin Plan contains these narrative water quality objectives applicable to trash: floating material (waters shall not contain floating material,

including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses); settleable material (waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses); and suspended material (waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses). Trash is being discharged at levels that have the reasonable potential to cause or contribute to excursions of these narrative water quality objectives. There are currently 26 waterbodies in the Region impaired by trash on the Clean Water Act section 303(d) list and most are receiving waters of discharges from Permittees' municipal storm drain systems. In addition, all Permittees have identified trash hot spots in their receiving water in a July 2010 submittal required by the previous permit. NPDES permitting authorities have discretion to include requirements for reducing pollutants in storm water as necessary for compliance with water quality standards. (*Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.) U.S. EPA recommends that for MS4 discharges with reasonable potential to cause or contribute to a water quality excursion, a permitting authority exercises its discretion to include clear, specific, and measurable requirements and, where feasible, numeric effluent limitations as necessary to meet water quality standards.⁵⁴ The permit contains such requirements to meet water quality standards.

The Basin Plan also contains includes Chapter 4 – Implementation, Table 4-1 Prohibitions, Prohibition 7, which prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. This prohibition was adopted by the Water Board in the 1975 Basin Plan, primarily to protect recreational uses such as boating.

In addition to the foregoing, it should be noted that the State Water Board on April 7, 2015, adopted amendments to the Ocean Plan and the Inland Surface Waters and Inland Bays and Estuaries Plans that establish a narrative water quality objective for trash; establish a prohibition on the discharge of trash; provide implementation requirements for permitted storm water and other dischargers; set a time schedule for compliance, and provide a framework for monitoring and reporting requirements (collectively, Trash Amendments). These Trash Amendments are subject to review by the Office of Administrative Law and U.S. EPA and are not yet effective. Nonetheless, the C.10 requirements of this Permit are consistent with the Trash Amendments.

⁵⁴ U.S. EPA, November 26, 2014, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load Waste Allocations for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs.'"

Fact Sheet Findings in Support of Provision C.10

C.10-1 Trash is a pervasive problem near and in creeks and in San Francisco Bay. Controlling trash continues to be one of the priorities for this Permit reissuance, not only because of the trash discharge prohibition, but also because trash causes major impacts on our enjoyment of creeks and the Bay. There are also significant impacts on aquatic life and habitat in those waters, and eventually to the global ocean ecosystem, where plastic often floats; persists in the environment for hundreds of years - if not forever; concentrates organic toxins; and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared, and can ingest plastic that looks like prey, losing the ability to feed properly.

For the purposes of this provision, trash is defined to consist of litter and particles of litter. Manmade litter is defined in California Government Code section 68055.1 (g): *Litter* means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

C.10-2 Data collected by Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,⁵⁵ over the 2003–2005 timeframe,⁵⁶ suggested that the approach to managing trash in waterbodies was not reducing the adverse impact on beneficial uses. The levels of trash in the waters of the San Francisco Bay Region were and are alarmingly high, considering the Basin Plan prohibits discharge of trash and that littering is illegal with potentially large fines. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to San Francisco Bay and the Pacific Ocean. On the basis of 85 surveys conducted at 26 sites throughout the Bay Area, staff has found an average of 2.93 pieces of trash for every foot of stream. All the trash was removed when it was surveyed, indicating high return rates of trash over the 2003–2005 study period. There did not appear to be one county within the Region with significantly higher trash in waters relative to other counties—the highest wet weather deposition rates were found in western Contra Costa County, and the highest dry weather deposition was found in Sonoma County. Results of the trash in waterbodies assessment work by staff show that rather than adjacent neighborhoods polluting the sites at the bottom of the watershed, these areas, which tend to have lower property values, are subject to trash washing off with urban stormwater runoff cumulatively from the entire watershed.

C.10-3 A number of key conclusions can be made on the basis of the trash measurement in streams:

⁵⁵ SWAMP Rapid Trash Assessment Protocol, Version 8

⁵⁶ SWAMP S.F. Bay Region Trash Report, January 23, 2007

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- Lower watershed sites have higher densities of trash.
 - All watersheds studied in the San Francisco Bay Region have high levels of trash.
 - There are trash source hotspots (usually associated with parks, schools, or poorly-kept commercial facilities located near creek channels) that appear to contribute a significant portion of the trash deposition at lower watershed sites.
 - Homeless encampments and creekside litter from a variety of sources is a significant source of trash directly dumped and placed in the riparian zone where it can be swept into receiving waters by storm flows.
 - Dry season deposition of trash, associated with wind and dry season runoff, contributes measurable levels of trash to downstream locations.
 - The majority of trash is plastic at lower watershed sites where trash accumulates in the wet season. This suggests that urban runoff is a major source of floatable plastic found in the ocean and on beaches as marine debris. While much of the initial trash deposited and washed into receiving waters is paper, the plastic trash, both floatable and non-floatable is the most persistent trash that survives, significantly impacting the Bay and Ocean.
 - Parks that have more evident management of trash by city staff and local volunteers, including cleanup within the creek channel, have measurably less trash pieces and higher RTA scores.
- C.10-4** The ubiquitous, unacceptable levels of trash in waters of the San Francisco Bay Region warrant a comprehensive and progressive program of education, warning, and enforcement, and certain areas warrant consideration of structural controls and treatment.
- C.10-5** Trash in urban waterways of coastal areas can become marine debris, known to harm fish and wildlife and cause adverse economic impacts.⁵⁷ Trash is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and ocean beaches throughout the San Francisco Bay Region, particularly in urban areas.
- C.10-6** Trash adversely affects numerous beneficial uses of waters, particularly recreation and aquatic habitat. Not all trash and debris delivered to streams are of equal concern with regards to water quality. Besides the obvious negative aesthetic effects, most of the harm of trash in surface waters is imparted to wildlife in the form of entanglement or ingestion.^{58,59} Some elements of trash exhibit significant threats to human health, such as discarded medical waste,

⁵⁷ Moore, S.L., and M.J. Allen. 2000. Distribution of anthropogenic and natural debris on the mainland shelf of the Southern California Bight. *Mar. Poll. Bull.* 40:83-88.

⁵⁸ Laist, D. W. and M. Liffmann. 2000. *Impacts of marine debris: research and management needs*. Issue papers of the International Marine Debris Conference, Aug. 6-11, 2000. Honolulu, HI, pp. 16–29.

⁵⁹ McCauley, S.J. and K.A. Bjorndahl. 1998. Conservation implications of dietary dilution from debris ingestion: sublethal effects in post-hatchling loggerhead sea turtles. *Conserv. Biol.* 13(4):925-929.

human or pet waste, and broken glass.⁶⁰ Also, some household and industrial wastes can contain toxic batteries, pesticide containers, and fluorescent light bulbs that contain mercury. Large trash items, such as discarded appliances, can present physical barriers to natural stream flow, causing physical impacts such as bank erosion. From a management perspective, the persistent accumulation of trash in a waterbody is of particular concern, and signifies a priority for prevention of trash discharges. Also of concern are trash hotspots where illegal dumping, littering, and/or accumulation of trash occur.

C.10-7 The Water Board, at its February 11, 2009, hearing, adopted a resolution proposing that 26 waterbodies in the region be added to the 303(d) list for the pollutant trash. The adopted Resolution and supporting documents are contained in Attachment 10.1 – 303(d) Trash Resolution and Staff Report Feb 2009.

C.10-8 The trash control strategies, monitoring requirements, and mandatory deadlines for trash reductions meet the “Maximum Extent Practicable” (MEP) standard contemplated by the CWA and include such other provisions as the Board determines appropriate for control to ultimately meet the narrative water quality objectives for floating material, settleable material, and suspended material. (CWA §402(p)(3)(B)(iii)) This Permit builds on the data and information collected in the last permit term and increases expectations of Permittees in this Permit. In particular, this Permit requires that the Permittees make significant progress toward having no trash impact on receiving waters by implementing a combination of increased full trash capture, and trash reduction and elimination measures that have similar effect to full trash capture. This is consistent with the statewide amendment to the Ocean Plan and the Inland Surface Waters, Bays and Estuaries Plan relating to trash controls. This Permit includes trash generation source identification and control, visual assessment data collection, and development of receiving water monitoring protocols. These requirements reflect the most current knowledge and data available concerning effectiveness of trash control strategies such as full trash capture, enhanced maintenance methods and current thinking regarding the best methods to assess trash reduction outcomes for the various trash reduction methods.

Specific Provision C.10 Requirements

C.10.a. Trash Reduction Requirements

C.10.a.i. Trash Reduction Schedule – This provision includes compliance deadlines of 70 percent trash load reduction by 2017 and 80 percent trash load reduction by 2019. To provide assurance that Permittees are making timely progress towards meeting the 2017 deadlines, this provision includes a performance guideline of 60 percent trash load reduction by 2016.. This performance guideline is a reporting requirement, but not an enforceable end point. It is a benchmark for assessing progress, and Permittees that do not attain the 60 percent performance guideline are

⁶⁰ Sheavly, S.B. 2004. *Marine Debris: an Overview of a Critical Issue for our Oceans*. 2004 International Coastal Cleanup Conference, San Juan, Puerto Rico. The Ocean Conservancy.

required to provide documentation in a report to the Water Board that adequate trash management actions to attain the forthcoming 2017 mandatory deadline is underway or scheduled. The compliance deadlines are consistent with the previous permits goals of 70 percent trash load reduction by 2017 and 100 percent trash load reduction (or no adverse trash impact) by 2022.

C.10.a.ii. Trash Generation Area Management – The overarching strategy for reducing trash involves mapping trash generation areas within a Permittee’s jurisdiction, then applying effective trash reduction actions to the areas of trash generation and assessing the effectiveness of those actions in delineated trash generation areas, until trash generation is reduced to the no impact level over a Permittee’s entire jurisdiction. The Permittees reported these trash generation maps with their Long Term Trash Reduction Plans February, 2014, and these maps provide the 2009 trash generation levels, which were required by the previous permit. Permittees that find inaccuracies in their submitted maps may submit corrected 2009 trash generation maps with their 2016 Annual Reports. Permittees developed their 2009 generation maps by dividing their jurisdiction into Very High, High, Moderate, and Low trash generation areas based on the following ranges of trash generation rates:

Low = less than 5 gal/acre/yr;
Moderate = 5-10 gal/acre/yr;
High = 10-50 gal/acre/yr; and
Very High = greater than 50 gal/acre/yr.

C.10.a.ii.a. Actual trash loading values, particularly in areas of high and very high trash generation areas, may vary significantly, but these delineated ranges provide a frame of reference for tracking and demonstrating trash load reductions and provide relative trash generation weight of these four categories. Permittees likely will need to reduce trash generation to at least Low to attain the ultimate required water quality-based outcome of no trash loads that cause or contribute to adverse trash impacts in receiving waters, i.e., the 2022 goal. Whether attainment of Low trash generation rates are sufficient will be evaluated and considered in the development of requirements in the next permit. Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to a Low trash generation rate during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the 2017 and 2019, 70 and 80 percent trash load reduction requirements, respectively, and consideration of the 2016 performance guideline.

C.10.a.ii.b. Permittees are responsible for trash discharges from their storm drain systems. Permittees have direct control over their properties and right of way, but must also exert control over other lands, such as commercial parking lots, that are plumbed directly into their storm drain system, since trash washed into such conveyance by stormwater will then directly impact receiving waters without encountering trash control actions on public right of way. Permittees may use a variety of means to ensure that either full trash capture devices are installed on such conveyances prior to intersection with the public storm drain system or that other

control actions equivalent to full trash capture are implemented on those private lands and such actions are verified through assessment, similar to the on-land visual assessment. Permittees must report the status of all such lands in parcel sizes over 10,000 ft² and place them on their trash generation maps or otherwise record location and status information about them. While Permittees are responsible for all such land in their jurisdictions, the Permit sets a reporting threshold of 10,000 ft² with the goal of balancing appropriate oversight over those lands and limiting the total number of specific parcels or area that must be identified and mapped.

C.10.a.iii. Minimum Full Trash Capture - This provision requirement is carried forward from the previous permit. Full trash capture systems provide a direct and effective mean to control trash discharges to and from storm drain systems. Commercial retail/wholesale land use area is a simple surrogate of trash generation area, and the minimum amount of area that was required to be treated with full trash capture systems was considered reasonable and achievable. Most, if not all, Permittees have already met or exceeded the minimum full trash capture requirement. Full trash capture system screening and treatment flow capacity specifications are the same as those specified in the previous permit. They are also the same as the full trash capture specifications in the Trash Amendments adopted by the State Water Board.

C.10.b Demonstration of Trash Reduction Outcomes

C.10.b.i.(a.-c.) Full Trash Capture Systems - Full trash capture systems must be maintained to be effective. If a full trash capture systems enters a rain period with a full trash reservoir, or is clogged with leaves or trash, trash may bypass the device and it will not function as a full trash capture device. Therefore these devices must be frequently inspected and maintained at a sufficient level. These requirements allow for Permittees to conduct inspections and maintenance in a flexible, as-needed, manner. Permittees are required to maintain adequate maintenance records and report any full trash capture devices found to be not adequately maintained or improperly functioning. Permittees are also required to certify annually that all of their full trash capture devices are adequately operated and maintained.

C.10.b.ii. Other Trash Management Actions

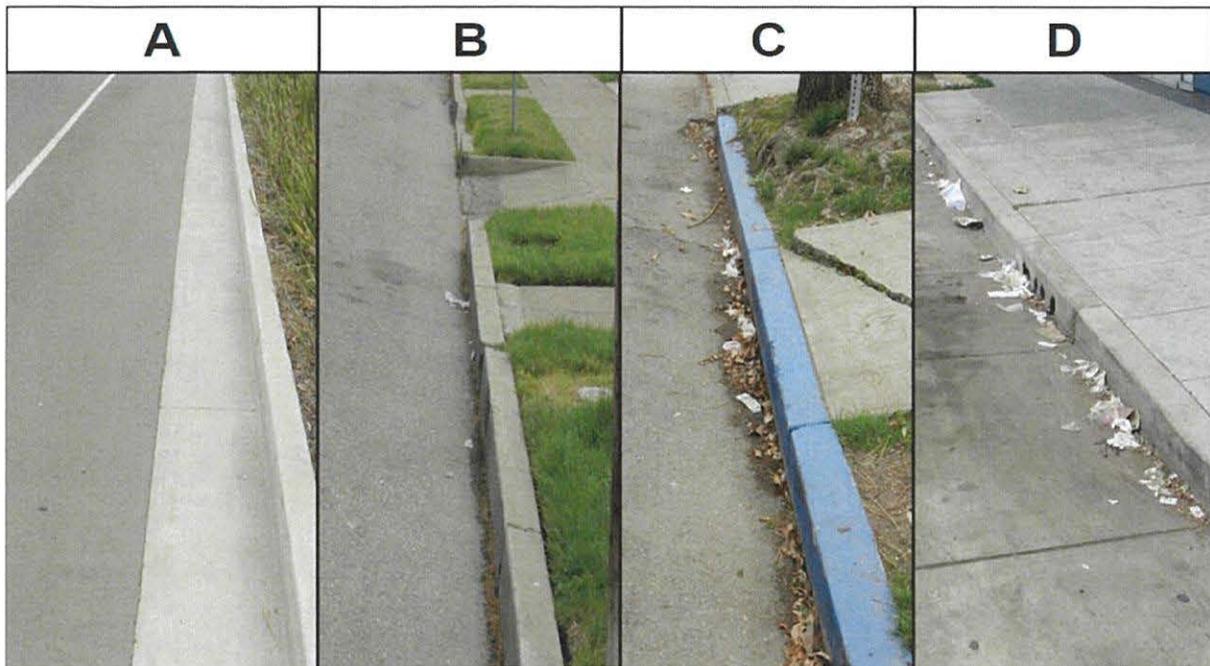
C.10.b.ii.a. Implementation Documentation – Documentation of trash management or control actions implemented and areas of implementation is essential to support trash reduction effectiveness and trash condition improvement.

C.10.b.ii.b.(i)-(iv)) Visual Assessment of Outcomes of Other Trash Management Actions – The primary tool currently available for determining trash reduction action success and positive outcomes is visual assessment, with photo documentation of trash generation and conditions in areas that drain to storm drains. Visual assessment involves observing a sufficient portion of each, e.g., sidewalk and curb area, at a frequency that adequately represents the trash management area condition relative to the type(s) of management actions implemented in the area. The frequency of required visual assessments depends on the rate of trash generation, the sources and types of trash, trash management actions deployed, and time of year. During the wet season, October through April, visual assessments in a trash

management area must be conducted at a frequency that determines whether there may be trash discharges to the storm drain system from sources or areas of trash accumulations before a trash management action or combination of actions is implemented or between recurring trash management actions. The degree of trash reduction that a Permittee claims also affects the frequency of visual assessment necessary to make the claim. Higher reduction claims typically require higher frequency of assessments.

During the wet season, for claims that a trash generation area has been reduced to a low trash generation area, this should be at least once per month in what was a very high trash generation area, at least twice per quarter in what was a high trash generation area, and once per quarter in what was a moderate trash generation area. Permittees, with justification, may conduct less frequent visual assessments for claims that a trash generation area has been reduced from what was a very high trash generation area to a high or moderate trash generation area or from what was a high trash generation area to a moderate trash generation area. Frequency of visual assessments during the dry season, May through September, should be at least once per quarter, including, and preferably, within the month (September) before the wet season begins. Higher frequencies of visual assessments than those illustrated above may be required to demonstrate effectiveness of trash control actions and claimed trash reduction. Lower frequencies than those illustrated above may also be acceptable with justification.

At this point in time, due to the lack of a standard method or protocol to effectively measure trash in receiving waters from municipal storm drains, visual assessment is the best type of monitoring to assure compliance with the Permit's requirements to implement trash management actions to reduce trash discharges into municipal storm drains. (See 40 CFR § 122.44(i).) The required amount, type, interval and frequency will yield data that is representative of the monitored activity, as required by 40 CFR § 122.48(b). This graphic demonstrates four trash visual conditions that correspond to the four trash generation categories of Very High (D), High (C), Moderate (B) and Low (A).



It is also possible to assess trash reduction outcome by documenting and verifying that trash management actions in a trash management area are equivalent to trash management actions implemented in an equivalent trash management area, and the actions in the equivalent trash management area have been assessed to be effective in accordance with a specified performance standard and the assessment results are reproducible. In such cases, it may be possible to extrapolate the performance assessment results to the equivalent trash management area with some verification. If this evidence is proposed by Permittees and accepted by the Executive Officer, Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within similar trash management areas to the same performance standard.

C.10.b.iii. Percentage Discharge Reduction – Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to lower trash generation categories and the Low generation status during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the 70 and 80 percent trash load reduction deadlines and consideration of the 2016 performance guideline (C.10.a.ii.a). However, trash management actions in Very High and High trash generation areas will result in more trash load reduction than actions in Moderate trash generation. Accordingly, a trash reduction demonstration methodology that provides relative benefit weight to actions in Very High and High areas is preferable to one that just considers percentage change in Very High, High, and Moderate trash generation area. The trash generation rates used by Permittees to delineate and map their 2009 trash generation area maps provide a means to provide a relative benefit weight to demonstrated reductions in the areas of Very High and High trash generation, even if they are not reduced all the way to Low generation.

The delineation of trash generation areas were based on ranges of trash generation rates (C.10.a.ii.). Therefore, the ratios of the approximate midpoints of the categorical trash generation ranges provides a means of weighing relative benefit to actions in Very High and High areas compared to actions in Moderate areas. The Moderate range is 5-10 gal/acre/yr, with a midpoint of 7.5 gal/acre/yr. The High range is 10-50 gal/acre/yr with a midpoint of 30 gal/acre/yr. Therefore, the weighed ratio of High to Moderate is $30/7.5 = 4$. The Very High range, greater than 50 gal/acre/yr, does not have a specified upper bound that allows calculation of a midpoint. An alternative that provides reasonable weighing of Very High is 90 gal/acre/yr, which is 40 percent higher than the low end of the Very High range. This results in a weighed ratio of Very High to Moderate of $90/7.5 = 12$.

The following formula provides a means of demonstrating attainment of the percent trash load reduction deadline and performance guidelines with weighted benefit of Very High and High trash generation area percent reductions relative to Moderate trash generation area percent reductions:

$$\% \text{ Reduction} = 100 [(12 A_{VH(2009)} + 4 A_{H(2009)} + A_{M(2009)}) - (12 A_{VH} + 4 A_H + A_M)] / (12 A_{VH2009} + 4 A_{H2009} + A_{M2009})$$

where:

- $A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area
- $A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area
- $A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area
- A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year
- A_H = total amount of high trash generation category jurisdictional area in the reporting year
- A_M = total amount of moderate trash generation category jurisdictional area in the reporting year
- 12 = Very High to Moderate weighing ratio
- 4 = High to Moderate weighing ratio
- 100 = fraction to percentage conversion factor

C.10.b.iv. Source Control – Jurisdiction-wide source control actions will have trash generation and load reduction benefit beyond what can be accounted for in trash management area specific assessment-based percentage discharge reduction (C.10.b.iii). These include Permittee efforts to adopt and implement source control on certain types of trash, particularly persistent, floating litter and other particularly difficult types of trash that are easily blown by the wind or clog full trash capture devices. This type of trash has been documented to be a significant percentage of the trash collected in full trash capture devices, and Permittees that have implemented such source control have documented significantly less such litter types in their hand collection of trash and litter on land. Permittees will be allowed to claim load reduction compliance value of up to ten percent load reduction total for all such

actions. This would be added to the % Reduction amount calculated by the C.10.b.iii - Percentage Discharge Reduction formula in demonstrating attainment of the percent trash load reduction deadline requirements and performance guideline. To claim a load percentage reduction value, Permittees must provide substantial evidence that these actions reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides evidence that the implementation of source control in its jurisdiction is similarly implemented as the source control assessed in the reference studies. Source control load reduction value(s) will be reviewed during reissuance of the Permit, and value(s) for source control load reductions might not be continued and allowed in the next permit, particularly in areas where the value of source controls will be accounted for in observed reductions in trash in trash generation areas, to avoid double counting. Also, the focus of the next permit will move to attainment of the 2022 goal and consideration of receiving water condition compliance indicators, and source control load reduction values may no longer be relevant.

C.10.b.v. Receiving Water Monitoring – Receiving water monitoring for trash provides additional evidence and can verify that full trash capture systems and other trash management actions are preventing trash from discharging into receiving waters and whether additional actions may be necessary associated with sources within a Permittee’s jurisdiction. They can also show whether there are ongoing sources outside of the Permittee’s jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). There are currently no standard methods and protocols for monitoring trash in receiving waters. However, BASMAA is developing and testing some trash monitoring tools and protocols via a California Proposition 84 grant funded project (Agreement # 12-420-550), *Tracking California’s Trash*. During this Permit term, the Permittees will develop and test trash receiving water monitoring tools and protocols designed, to the extent possible, to answer the following questions:

1. Have a Permittee’s trash control actions effectively prevented trash within a Permittee’s jurisdiction from discharging into receiving water(s)?
2. Is trash present in receiving water(s), including transport from one receiving water to another, e.g., from a creek to a San Francisco Bay segment, at levels that may cause adverse water quality impacts?
3. Are trash discharges from a Permittee’s jurisdiction causing or contributing to adverse trash impacts in receiving water(s)?
4. Are there sources outside of a Permittee’s jurisdiction that are causing or contributing to adverse trash impacts in receiving water(s)?

The monitoring tools and protocols may include direct measurements and/or observation of trash in receiving waters. In scenarios where direct measurements or observations are not feasible, surrogates for trash in receiving waters, such as measurement or observation of trash on shorelines or creek banks may provide a practicable means of monitoring trash. This includes consideration and appropriate simplification of the shoreline and creek bank trash assessment method developed by Water Board staff, *Rapid Trash Assessment Method Applied to Waters of the San*

Francisco Bay Region: Trash Measurement in Streams. Surface Water Ambient Monitoring Program. April 2007.

The goal is to establish the least expensive and simplest to use monitoring methods and protocols that are applicable to the various discharge and receiving water scenarios that accounts for the various receiving waters and watershed, community, and drainage characteristics within Permittees' jurisdictions that affect the discharge of trash and its fate and effect in receiving water(s). These and other factors, such as feasibility, location logistics, types of trash, complexity, and costs, provide a means to focus and limit the number of monitoring tools and protocols, and determine spatial and temporal representativeness of the tools and protocols, representativeness of scenarios that will be tested.

Keys to establishing the least expensive and simplest to use monitoring methods and protocols include: their acceptance and use by interested parties; ensuring their scientific integrity by having them peer reviewed; and a user-friendly system to manage and access monitoring results. To provide a balance between allowing time to develop and test the tools and protocols and allowing enough time to review the proposed monitoring program in advance of reissuance of the Permit, Permittees must submit a preliminary report on the proposed monitoring program by July 1, 2019, a year in advance of the final proposed monitoring program due July 1, 2020, six months before the Permit expires. This should allow for early resolution of some monitoring program issues that are not dependent on completion of tests. Given the interest in receiving water monitoring by multiple parties, Permittees are encouraged to conduct development and testing of the tools and protocols and development of the monitoring program through an independent third party, such as the San Francisco Estuary Institute, that provides for interested party participation and scientific peer review of the work. Permittees will not be required to submit the preliminary monitoring program report if the work is conducted by an independent third party.

C.10.c. Trash Hot Spot Selection and Clean Up

The previous permit included a requirement for Permittees to cleanup a minimum number of Trash Hot Spots in receiving waters or on shorelines or creek banks associated with their jurisdictions. Trash Hot Spot cleanups remove trash discharged from a Permittee's jurisdiction and lessen the adverse impacts from the discharges until they are abated by a Permittee's trash management actions. Trash Hot Spot cleanups have an added benefit in that they may also remove discharges of trash from non-storm drain sources, e.g., direct dumping or homeless encampments. They also provide an additional means of assessing the effectiveness of Permittees' trash management actions and identification of the types and sources of trash. The required Trash Hot Spot assessment is based on the SWAMP Rapid Trash Assessment Protocol.

C.10.d. Trash Load Reduction Plans

The previous permit required Permittees to prepare a Plan to achieve the 2017 and 2022 trash reduction deadline requirements. A Trash Load Reduction Plan provides a means for Permittees to determine and account for appropriate trash management actions in their trash management areas and their schedule of implementation, and it provides

documentation of planned actions that can be referenced if annual performance guidelines are not met. It also provides a basis for justifying and accounting for the types and locations of Permittees' assessments of trash management actions, and for optional trash load offset opportunities allowed by C.10e.

C.10.e. Optional Trash Load Reduction Offset Opportunities

C.10.e.i. Additional Creek and Shoreline Cleanup - Some Permittees cleanup more than the minimum required C.10.c Trash Hot Spot cleanups. These additional creek and shoreline cleanups are of value in removing trash from shorelines and creeks or creek banks that are causing or may cause adverse impacts to receiving waters. Permittees conduct some of these additional cleanups with community volunteers, which creates additional public outreach and participation benefits.

The volume of trash removed in these cleanups tends to be high compared to the estimated volume rate loads calculated using the average (nominal midpoint) trash generation rates (C.10.a.ii). This is due in part to Trash Hot Spot locations, which are often downstream of Very High and High trash generation areas with actual generation rates at the upper end of those category ranges. Another reason may be that these cleanups likely remove trash from direct discharges other than from Permittees' storm drain systems. Also, these cleanups sometimes occur just one-time so the volume of trash removed cannot be directly compared with required trash reduction rate volumes.

One way to recognize the value of these additional cleanups and to account for the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume /time) is to use an offset ratio of three to one for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, and ten to one for the 2019 mandatory trash load reduction deadline, when comparing additional cleanup volumes with 2009 trash load estimates based on using average trash generation category values and to cap the offset amount. The following formula generates a Permittee-specific trash volume amount, based on its 2009 categorical trash generation areas and a three to one or ten to one offset ratio, which may be used to offset one percent of a required percent load reduction value:

$$1\% \text{ Reduction Offset (volume)} = (12 A_{VH(2009)} + 4 A_{H(2009)} + A_{M(2009)}) OF$$

where:

$A_{VH(2009)}$ = total amount of 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of 2009 moderate trash generation category jurisdictional area

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

OF = offset factor equal to (7.5×0.033) for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.033 is the three to one offset ratio, or (7.5

x 0.1) for the 2019 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

A Permittee can compare trash volumes collected from additional cleanups to this calculated offset volume and apply one percent offset to a C.10.a.i percent load reduction requirement for each collected volume that equals the 1% Reduction Offset (volume). However, the total offset that can be claimed to avoid over-compensation associated with the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume/time) is limited to ten percent. Furthermore, to justify the offset the associated cleanups must occur more than once per year and preferably at a frequency sufficient to demonstrate sustained improvement of a creek or shoreline area. Offset values will be reviewed during reissuance of the permit, and value(s) for cleanups might not be continued and allowed in the next permit, particularly in areas where Permittees have responsibility for discharges of trash to a cleanup area. The focus of the next permit will move to attainment of the 2022 goal and consideration of receiving water condition compliance indicators, and cleanup values may no longer be relevant.

C.10.e.ii. Direct Discharge Controls - Some Permittees are faced with the challenge that large amounts of trash are discharged to receiving waters in their jurisdiction from homeless encampments and direct dumping. These trash discharges are separate from and in addition to discharges from Permittee storm drain systems. Elimination and prevention of adverse water quality impacts due to trash and attainment of water quality standards in receiving waters will require management of these non-storm drain system discharges in addition to control of storm drain system trash discharges by Permittees. Accordingly, some Permittees are taking or are willing to take actions to control these other sources by implementing a comprehensive plan to control all sources of trash discharged to receiving waters in their jurisdiction. Accordingly, Permittees should be allowed to offset some of their percent load reduction requirements if they control these other sources.

Permittees have and likely will continue to demonstrate the benefit of controlling these additional sources by accounting for the volume of trash collected. As with additional creek and shoreline cleanups, the volume of trash removed cannot be compared directly with trash load discharge rate (volume/time). The simplest, and possibly only way to account for these additional control actions, until more rigorous assessment and accountability methods are developed, is to allow a Permittee to offset part of its C.10.a trash load percent reduction requirement using the C.10.e.i formula to determine an offset from additional creek and shoreline cleanup. However, since control of these other sources by Permittees will be through implementation of a comprehensive and sustained program, Permittees that implement a comprehensive plan approved by the Executive Officer merit a higher offset cap than that allowed by C.10.e.i for additional creek and shoreline cleanup. A fifteen percent offset-cap based on the C.10.e.i formula provides a balance between incentive and reward for control of these non-storm drain system sources and the uncertainties associated with the simple formula. It is likely that this offset will be removed from this provision during

the next permit term. This will occur as the 2022 target deadline approaches and the focus turns to determining the condition of the receiving waters to determine compliance.

C.10.f. Reporting

The reporting requirements reflect the minimum amount of information needed to demonstrate compliance with all Provision C.10 requirements.

Costs of Trash Control

With the assistance of a \$5 million grant from the American Recovery and Reinvestment Act obtained and distributed by the San Francisco Estuary Partnership, the Permittees cumulatively exceeded the full trash capture permit requirement acreage by over a factor of four. Therefore, it would appear that the following cost estimate produced in 2008 significantly over-estimated the costs of full trash capture installation at the time.

Costs for either enhanced trash management measure implementation or installation and maintenance of trash capture devices are significant, but when spread over several years, and when viewed on a per-capita basis, are reasonable.

Trash is costly to remove from our aquatic resource environments. Staff from the California Coastal Commission report that the Coastal Cleanup Day budget statewide: \$200,000-250,000 for Coastal Commission staff, and much more from participating local agencies. The main component of this event is the 18,000 volunteer-hours, which translates to \$3,247,200 in labor, and so is equivalent to \$3,250,000-3,500,000 per year to clean up 903,566 pounds of trash and recyclables at \$3.60 to \$3.90 per pound. This is one of the most cost-effective events because of volunteer labor and donations. The County of Los Angeles spends \$20 million per year to sweep beaches for trash, according to Coastal Commission staff.

Mr. Morad Sedrak, the TMDL Implementation Program Manager, Bureau of Sanitation, Department of Public Works, City of Los Angeles, reports that the City plans to invest \$72 million dollars for storm drain catch basin based capture device installation primarily, for a City of 4 million population, for a per-capita cost of \$18 dollars. This effort is occurring over a span of over five years, for an annual per-capita cost of under \$4.

Mr. Sedrak reports that O&M costs are not anticipated to increase, as the City of L.A. is already budgeted for 3 catch basin cleanings per year. He also states that catch basin inserts installed inside the catch basin in front of the lateral pipe, which have been certified by the Los Angeles Regional Water Board as total capture trash control devices, cost approximately \$800 to \$3,000 (including installation) depending on the depth of the catch basin. .

Furthermore, the price for catch basin opening screen covers, which are designed to retain trash at the street level for removal by sweepers, and also to open if there is a potential flooding blockage, ranges roughly from \$800 to \$4,500, depending on the opening size of the catch basin.

The City of Los Angeles has currently spent 27 million dollars on a retrofit program to install catch basin devices in approximately 30% of its area, with either inserts or screens

or both. Mr. Sedrak states that Los Angeles plans to spend \$45 million over the next 3 years to retrofit the remaining catch basins within the City. The total number of catch basins within the City is approximately 52,000.

The following are links to information about the Los Angeles trash control approach:

<http://www.lastormwater.org/Siteorg/program/TMDLs/trashtmdl.htm>

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf

http://www.lastormwater.org/Siteorg/program/poll_abate/cbscreens.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbinserts.htm

In Oakland, the Lake Merritt Institute is currently budgeted at \$160,000 per year, with trash and litter removal from the Lake as a major task. The budget has increased from about \$45,000 in 1996 to current levels. In the period of 1996-2005 the Lake Merritt Institute staff, utilizing significant volunteer resources, and accomplishing other education tasks, removed 410,859 pounds of trash from the Lake at cost of \$951,725, or \$2.30 per pound.

The City of Oakland reports that installation of two vortex and screen separators cost \$821,000 for installations and treat tributary catchments of 192 acres before discharge to Lake Merritt (a cost of \$4,276 per acre). The following table details these costs and other pertinent information

City of Oakland—CDS Unit Overview 9-07

Existing CDS unit location	Outfall number	Treatment area (acres)	Cost of implementation	Sizing	Maintenance requirements	Comments
Intersection of 27 th and Valdez Streets	56*	71	\$203,000 to contractor; plus ~\$100,000 City costs	73 cfs peak flow; 36" stormdrain; Unit sizing: 18'6'6" box with 10'11" diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Required relocation of electrical conduit. Water main and gas line were also in the way; the box was adjusted to accommodate these conflicts.
Intersection of 22 nd and Valley Streets	56*	121	\$368,000 to contractor; plus ~\$150,000 City costs	115 cfs peak flow; 54" storm drain; Unit sizing: 18'8.5'6" box with 12' diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Installation costs were higher than anticipated. Sewer lines and PGE facilities were exposed that were not known before. Unit had to be modified and poured-in-place.

* The City is treating 192 acres or 72 percent of the 252 acres draining to outfall number 56.

Additional cost information on various trash capture devices is included in the Santa Clara Valley Urban Runoff Pollution Prevention Program BMP Trash Toolbox (July 2007). The Toolbox contains cost information for both trash capture devices and enhanced trash management measure implementation, covers a broad range of options and also discusses operation and maintenance costs. Catch basin screens are included with an earlier estimate by the City of Los Angeles of \$44 million over 10 years to install devices in 34,000 inlets.

The City of Oakland provided information on the cost of trash booms. The Damon Slough trash boom or sea curtain cost \$36,000 for purchase and installation, including slough side access improvements for maintenance and trash removal. Annual maintenance costs have been \$77,000 for weekly maintenance, which includes use of a crane for floating trash removal.

C.11. Mercury Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury wasteload allocations established for the TMDLs.

The C.11 provisions follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)) and accordingly, build on understanding gained from pilot testing many control measures during the Previous Permit term. During this Permit term Permittees are expected to continue to improve the level of certainty concerning control measure benefit and effectiveness by implementing actions in a phased approach, and then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective.

However in contrast to the Previous Permit term, this Permit does not specify control measures to implement to achieve load reductions. Rather, the permit requires development and implementation of a load reduction accounting scheme along with a quantitative demonstration of the load reductions that result from implementation of all relevant control measures. The Permittees may comply with any requirement of this provision through a collaborative effort. Many of the control measures may be chosen primarily for the purpose of achieving PCBs load reductions, but substantial mercury load reductions may result as a tangential benefit and should be accounted for.

Fact Sheet Findings in Support of Provision C.11

- C.11-1** On August 9, 2006, the Water Board adopted a Basin Plan amendment including a revised TMDL for mercury in San Francisco Bay, two new water quality objectives, and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. C.11-3 through C.11-7 are components of the Mercury TMDL implementation plan relevant to implementation through the municipal stormwater permit.
- C.11-2** On October 8, 2008, the Water Board adopted a Basin Plan amendment including a TMDL for mercury in the Guadalupe River Watershed (GRW) and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. The GRW mercury TMDL assigns an urban stormwater runoff allocation proportionally equivalent to the mass allocation in the San Francisco Bay mercury TMDL. Accordingly, the GRW urban stormwater runoff mercury allocation is simply the fraction of the Santa Clara Valley Urban Runoff Pollution Prevention Program allocation attributed to the Guadalupe River watershed. The urban stormwater runoff allocation implicitly includes all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas including, but not limited to, California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public

facilities, properties proximate to stream banks, industrial facilities, and construction sites.

- C.11-3** The 2003 load of mercury from urban runoff was estimated to be 160 kg/yr, and the aggregate WLAs for urban runoff is 82 kg/yr and shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and Caltrans. The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, *source category*) including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.
- C.11-4** The allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved within 10 years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.
- C.11-5** The NPDES permits for urban runoff management agencies shall require the implementation of BMPs and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to humans and wildlife. Requirements in the permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff and remain consistent with the section of the Basin Plan chapter titled, *Surface Water Protection and Management—Point Source Control—Stormwater Discharges*.
- C.11-6** The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.
- a. Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;
 - b. Continue to develop and implement a mercury source control program;
 - c. Implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;
 - d. Monitor levels of methylmercury in discharges. This requirement was satisfactorily accomplished during the last permit term and will not be included in the permit during this permit term;
 - e. Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal

areas. This requirement is not necessary at the moment and will not be included in the permit during this permit term;

- f. Develop an equitable allocation-sharing scheme in consultation with Caltrans to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board (This was satisfactorily accomplished during the last permit term);
- g. Prepare an Annual Report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and
- h. Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in Individual WLAs (see Table 4-w of the Basin Plan amendment), by using one of the following methods:
 - (1) Quantify the annual average mercury load reduced by implementing
 - i. Pollution prevention activities, and
 - ii. Source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.
 - (2) Quantify the mercury load as a rolling 5-year annual average using data on flow and water column mercury concentrations.
 - (3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

C.11-7 Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

C.11-8 Recent estimates using the latest available data suggest that the urban runoff mercury loading to San Francisco Bay is on the order of 115 kg/yr (McKee and Yee 2015⁶¹). While this figure is based on environmental data and thus has

⁶¹ McKee, L.J. and Yee, D., 2015. Sources, Pathways and Loadings: Multi-Year Synthesis. A technical report prepared for the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP), Sources, Pathways and Loadings Workgroup (SPLWG), Small Tributaries Loading Strategy (STLS). San Francisco Estuary Institute, Richmond, California.

inherent uncertainty associated with it, it suggests that current mercury loading is approximately equal to the interim TMDL loading milestone (to be reached at the half-way point of TMDL implementation, 2017) of 120 kg/yr. If mercury loads can be reduced by approximately 35 additional kg/yr, urban runoff loading would meet the TMDL wasteload allocation.

- C.11-9** Mercury is distributed more uniformly throughout the urban landscape than PCBs. For example, loading from older industrial and other polluted source areas accounts for only 6% of the average annual mercury load, but these areas account for over 50% of the average annual PCBs load (McKee and Yee 2015). The likely stronger role of atmospheric deposition in the case of mercury, which may account for up to 50% of the mercury found in urban runoff, is part of the reason for the more uniform mercury distribution in the landscape (McKee and Yee 2015).
- C.11-10** Monitoring data indicate that, while not always the case, watersheds with high PCBs concentrations often contain high or moderately high mercury concentrations (McKee and Yee 2015). Therefore, control strategies focused on finding and managing PCBs-contaminated drainages will often yield mercury load reduction benefits as well.
- C.11-11** This provision is consistent with a recent U.S. EPA memorandum⁶² providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear and concrete milestones and deadlines (see C.11.a.iii) for the activities associated with achieving mercury load reductions as well as other requirements (see C.11.b-h.), necessary to achieve receiving water limits of this Permit term relative to the mercury TMDL WLA.

Specific Provision C.11 Requirements

Provision C.11.a. requires Permittees to implement control measures to achieve mercury load reductions. In order to comply with this requirement, Permittees must identify the mercury control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation. Moreover, Permittees must demonstrate quantitatively the load reductions achieved through use of the accounting scheme developed through C.11.b.

This provision is critical to the successful implementation of the urban runoff requirements from the mercury TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds and management areas, 2) a commitment to an implementation schedule, and 3) the quantification of load reductions resulting from control measure implementation. Many or most of the control measures that will generate mercury reduction benefits will be chosen based on the benefit for PCBs load reductions.

⁶² U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum “Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs”

Available data indicate that this strategy of focusing on PCBs will yield mercury load reductions in many circumstances. However, there are conceivable control measures that are unique to mercury, like those addressing collection and recycling of mercury-containing devices, and these are, in fact, required by household hazardous waste and producer responsibility laws.

Recent loading estimates suggest that current mercury loading to the Bay is at or below the interim loading milestone established in the TMDL. Moreover, mercury is more evenly distributed in the landscape than PCBs so there are fewer opportunities to find and address heavily contaminated (with mercury) sites to achieve substantial, short-term load reductions. Instead, much of the additional benefit to reduce mercury urban runoff loads will come from a combination of proper disposal and management of mercury containing products as well as much more extensive treatment elements (e.g., green infrastructure) incorporated into the stormwater infrastructure. For these reasons, short-term load reduction performance criteria are not included in C.11.a (in contrast to C.12.a for PCBs).

Provision C.11.b. requires Permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this Permit.

Permittees submitted land-use mass yields of mercury in their 2014 Integrated Monitoring Report (IMR) for the Previous Permit. When these yields were multiplied by the total area of various land-use categories, the estimated regionwide (for the entire region that discharges to the Bay) mercury load was lower than the load estimated in the mercury TMDL by approximately a factor of 1.3. Therefore, the land-use yields were multiplied by a factor of 1.3 in order to normalize to the estimated baseline mercury load in the mercury TMDL and to agree with recent load estimates from runoff. The resultant (adjusted) mass yields for three land-use types shown here are based on data Permittees collected during the Previous Permit term and provide a reasonable means of calculating the mercury load reductions for control measures implemented in corresponding areas. Permittees may refine these yields when they submit supporting documentation in their 2016 Annual Report.

- Old Industrial Land Use = 1300 mg mercury/acre/year
- Old Urban Land Use = 215 mg mercury/acre/year
- New Urban areas and Other = 33 mg mercury/acre/year

The land-use yield provides a convenient way to calculate the resulting load reduction of various sorts of control measure strategies. For example, when contaminated areas are **newly or redeveloped**, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). So, the amount of mercury load reduction can be obtained by multiplying the area of new/redevelopment by the difference in yield (either old industrial minus new urban or old urban minus new urban, whichever pre-development land-use is applicable).

The mercury load reductions for **retrofits or other treatment controls** (including green infrastructure) can be calculated by multiplying the area treated by the assumed land-use yield of the treated area multiplied by the efficiency factor of the treatment method (using a default value of 70 percent or an efficiency established through documentation of implemented method and reported in annual reports).

For **contaminated private properties** that are referred to the Water Board or other agencies for subsequent remediation, the estimated load reduction can be derived by assuming that the mercury yield of the source area is reduced over the course of site cleanup from a high yield to the old urban yield (215 mg mercury/acre/year). Source areas identified for the purpose of referral tend to have much higher areal yields, but data are not currently available to provide an interim estimate for the mercury yield of such contaminated sites. Permittees would need to provide this information prior to receiving mercury load reduction credit from referral of private properties for cleanup.

This provision allows the opportunity for Permittees to update their default load reduction accounting factors, as adjusted by the Water Board, and in some cases extending the accounting framework presented in the IMR, justifying assumptions and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected to confirm the load reduction for each type of implemented control measure. Any adjustments to the default accounting framework must be submitted for Executive Officer approval.

Provision C.11.c Available information suggests that mercury is distributed more uniformly throughout the Bay Area landscape than is the case for PCBs. Therefore, a focus on highly contaminated areas (with mercury) may not be enough to achieve the TMDL-required load reductions. A critical part of the strategy to reduce urban runoff mercury loads will be the widespread implementation of green infrastructure control measures to intercept mercury-containing sediment and stormwater before it is discharged to receiving water. Provision C.11.c requires Permittees to implement green infrastructure projects during the term of the permit to achieve mercury load reductions of 48 g/year by June 30, 2020. This green infrastructure load reduction requirement is feasible in that these load reductions are approximately equivalent to the scale of load reduction achieved during the Previous Permit term through green infrastructure and C.3-related treatment controls (Integrated Monitoring Report 2014). It is reasonable to expect that a similar or greater pace of redevelopment plus green infrastructure implementation on public property can be achieved during this Permit term. The green infrastructure load reduction requirement is warranted because it is important to provide a clear performance expectation for Permittees for green infrastructure implementation because widespread and effective green infrastructure implementation will be an important component of achieving the load reductions necessary to achieve the mercury TMDL wasteload allocation.

County-specific load reductions are derived from the allocations and load reductions stated in the mercury TMDL. Namely, the TMDL-required load reduction for a county was divided by the total TMDL-required load reduction for the permit area (the area covered by this Permit) and this fraction was multiplied by 48 g/yr to derive the county-

specific green infrastructure load reduction requirement. While not required in the Permit, it will be essential to develop effective and easy-to-use tracking and visualization tools so Permittees, regulators, and stakeholders can monitor progress of green infrastructure implementation and its water quality impacts.

Because mercury is distributed throughout the urban landscape, extensive implementation of green infrastructure elements is going to be necessary to achieve the load reductions required by the TMDL. However, the planning, financing and implementation of green infrastructure is going to take a long time, perhaps as much as 25 years or more. This also means that the load reduction benefits of such implementation will also be realized over an extended time frame. To ensure that Bay Area municipalities are working effectively and expeditiously in implementing appropriate green infrastructure controls to reduce loads of mercury, PCBs and other pollutants of concern, the Permit requires Permittees to prepare a reasonable assurance analysis to rigorously and quantitatively demonstrate that mercury load reductions of at least 10 kg/yr throughout the permit area will be achieved over the course of the next 25 years (i.e., by 2040) through implementation of green infrastructure throughout the permit area..

Preparing the reasonable assurance analysis will be a step-wise process. Permittees must: establish the relationship between areal extent of green infrastructure implementation and mercury load reductions, estimate the amount and characteristics of land area that will be treated through green infrastructure in future years, and estimate the amount of mercury load reductions that will result from green infrastructure implementation by specific future years. Ultimately, the reasonable assurance analysis will require the use of one or more models. Permittees must therefore ensure that the calculation methods, models, model inputs and modeling assumptions used to make the demonstration have been validated through a peer review process.

Fortunately, the permittees in the Bay Area can take advantage of related (reasonable assurance analysis) efforts already underway in Southern California. The Los Angeles Regional Water Board has produced a useful set of guidelines for conducting a Reasonable Assurance Analysis (RAA) for the watershed management programs that are required through their MS4 permits.⁶³ These guidelines provide an excellent reference and starting point for the RAA required through C.11/12.c in terms of the mechanics of the analysis, BMP identification, critical condition selection, choice of models, model calibration criteria, modeling inputs, and model outputs. The crucial feature of the Southern California RAAs is that they must demonstrate with sufficient analytical rigor that the suite of foreseeable control measures to reduce loads will result in compliance with final WLAs. The RAA performed for PCBs and mercury for the San Francisco Bay Area will be similar in many respects to the type of analysis described in the Southern California guidance document, but they must also account for the local watershed characteristics as well as what has been learned about the distribution, fate, and transport characteristics of PCBs and mercury.

⁶³ Los Angeles Regional Water Quality Control Board (LARWQCB) 2015. *Guidelines for Conducting Reasonable Assurance Analysis in a Watershed Management Program, Including an Enhanced Watershed Management Program.*

Provisions C.11.d requires Permittees to prepare a long-term plan and schedule for mercury control measure implementation and corresponding reasonable assurance analysis quantitatively demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations. The type of analysis for this provision shares many features with the one conducted as part of C.11.c.

The mercury TMDL anticipated the challenge of achieving the urban runoff mercury load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that

“the Water Board will consider modifying the schedule for achievement of the load allocations for a source category or individual discharger provided that they have complied with all applicable permit requirements and all of the following have been accomplished relative to that source category or discharger:”

- *A diligent effort has been made to quantify mercury loads and the sources of mercury and potential bioavailability of mercury in the discharge;*
- *Documentation has been prepared that demonstrates that all technically and economically feasible and cost effective control measures recognized by the Water Board as applicable for that source category or discharger have been fully implemented, and evaluates and quantifies the comprehensive water quality benefit of such measures;*
- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.*

Provision C.11.d provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. For example, as explained previously the load reductions for mercury are going to depend heavily on long-term implementation of control strategies (like green infrastructure) that extend beyond the current implementation timeframe of the mercury TMDL. The long-term plan and schedule required as part of this provision will lay the foundation for a formal recognition of an implementation timeframe that is longer than originally conceived in the TMDL.

Provision C.11.e requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in the previous permit term, which funded community based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.12. PCBs Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs wasteload allocations established for the TMDL. In order to make substantial progress, Permittees must implement PCBs control measures strategically during this Permit term. Moreover, aggressive control measure implementation combined with thoughtful planning for the future (see C.12.d) are conditions that must be satisfied before the Water Board can consider an implementation timeframe longer than the 20 years provided in the TMDL.

The C.12 requirements follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)) and accordingly, build on understanding gained during the Previous Permit term. During the Previous Permit, Permittees were required to pilot test a variety of control measures in a limited number of watersheds or portions of a watershed (management area). Building on that knowledge, this provision requires Permittees to implement PCBs control measures (source control, treatment control and/or pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and to report on the loads reduced through implementation of those control measures.

In contrast to the Previous Permit, this Permit does not require implementation of specific control measures. Rather, the Permittees must use their judgment and knowledge of their watersheds to choose the optimum suite of control measures in order to optimize PCBs load reductions. A technically sound load reduction accounting method, based on information gained during the testing phase and based on information reported at the end of the Previous Permit, is provided in this Permit Fact Sheet to provide certainty for Permittees.

As discussed below, based on information gained during control measure pilot testing and reported during the Previous Permit term, load reductions on the order of those required by this Permit are achievable (see Basis for Required PCBs Load Reductions in MRP 2, February 23, 2015) and necessary in order to make progress toward achieving the regionwide urban runoff wasteload allocation of 2 kg/yr (representing a load reduction from all urban runoff sources of approximately 18 kg/yr compared to loads estimated using data collected in 2003) within the 20-year TMDL timeframe. Further, load reductions resulting from a variety of PCBs control measures may be feasibly calculated in a straightforward manner (see below), and numeric load reduction requirements provide an unambiguous accountability metric against which to evaluate the sufficiency of control measure implementation. In contrast, it is problematic to assess the sufficiency of Permit requirements that merely call for the implementation of BMPs without a specification of the extent or intensity of such BMP implementation. Because specific load reductions are called for by the TMDL, the approach employed in the Permit (specific load reduction requirements) is both more straightforward and appropriate.

The area covered by the Permit (permit area) is smaller than the region that discharges to the Bay. The discharges in the permit area have been allocated 1.6 kg/yr of the total 2 kg/yr wasteload allocation and the total load reductions required from Permittees in the permit area during TMDL implementation is 14.4 kg/yr of the 18 kg/yr regionwide total.

Fact Sheet Findings in Support of Provision C.12

C.12-1 On February 13, 2008, the Water Board adopted a Basin Plan amendment establishing a TMDL for PCBs in San Francisco Bay and an implementation plan to achieve the TMDL. U.S. EPA approved the TMDL on March 29, 2010.

C.12-2 The following excerpts from the TMDL implementation plan are relevant to implementation of the municipal stormwater permit:

“The 2003 load of PCBs from urban runoff is 20 kg/yr, and the aggregate WLAs for urban runoff total 2 kg/yr. Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities ... shall reduce PCBs in stormwater runoff to the maximum extent practicable....

In the first five-year permit term, stormwater Permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater Permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the

load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.”

- C.12-3** Urban runoff management agencies have a responsibility to oversee various discharges within the agencies’ geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question. If these sources are contributing to urban runoff loads (as opposed to direct Bay discharge), load reductions from these sources will count toward meeting the urban runoff wasteload allocations.
- C.12-4** Some PCB congeners have dioxin-like properties. Dioxins are persistent, bioaccumulative, toxic compounds that are produced from the combustion of organic materials in the presence of chlorine. Dioxins enter the air through fuel and waste emissions, including diesel and other motor vehicle exhaust fumes and trash incineration, and are carried in rain and contaminate soil. Dioxins bioaccumulate in fat, and most human exposure occurs through the consumption of animal fats, including those from fish. Therefore, the actions targeting PCBs will likely have the simultaneous benefit of addressing a portion of the dioxin impairment resulting from dioxin-like PCBs.
- C.12-5** Recent estimates using the latest available data suggest that the urban runoff PCBs loading to San Francisco Bay is on the order of 19 kg/yr (McKee and Yee 2015). While this figure is based on environmental data and thus has inherent uncertainty associated with it, it agrees very well with the regional urban runoff load estimate of 20 kg/yr provided in the TMDL report.
- C.12-6** Studies suggest that PCBs load reductions of approximately 6 kg/yr are possible by 2030 through control measures like street sweeping, control of PCBs during building demolition and renovation, drop inlet cleaning, treatment retrofits, redevelopment of contaminated areas, pump station diversion, and street flushing (McKee and Yee 2015). While there are substantial uncertainties associated with these estimates, these results suggest that a substantial portion of the additional load reductions (~ 12 kg/yr) necessary to achieve the PCBs TMDL may need to come from identification and cleanup of PCBs-contaminated properties.
- C.12-7** The distribution of PCBs in the urban landscape is much more variable than it is for mercury. For example, data indicate that PCBs-contaminated land uses yield perhaps 800 times more PCBs per unit area compared to the least contaminated land uses. By contrast, there is a 70-fold difference between the highest and lowest yielding land uses for mercury (McKee and Yee 2015). A large proportion (about 53 percent) of annual average urban runoff PCB loading is

likely coming from old industrial or other contaminated areas (McKee and Yee 2015).

- C.12-8** A significant recent accomplishment of the Sources, Pathways, and Loadings workgroup of the Regional Monitoring Program has been the development and refinement of a regional watershed spreadsheet model (RWSM). This GIS-based model estimates relative land use and source area yields, and integrates them to provide a transparent, mutually accepted, and peer-reviewed analysis of relative watershed scale yield. Outputs from model runs to date suggest yields for the most polluted watershed in excess of 1000 g/km² for PCBs and mercury and a variation between watersheds of ~100,000-fold for PCBs and ~200-fold for mercury. To date, modeling results have a large amount of uncertainty in terms of absolute magnitude, but the results are capturing the patterns of contaminant distribution and transport. The model output is generally consistent with what is known about the distribution of these contaminants in the landscape from stormwater and bedded sediment data. The results are also consistent with what monitoring data tell us about the relative mercury and PCBs loads from land use and source area categories. The predictive power of this modeling tool will be improved as more data are available to characterize PCBs and mercury concentrations in the watersheds and will be useful in predicting regional and sub-regional scale loads of PCBs and other contaminants under a variety of management scenarios (McKee and Yee 2015).
- C.12-9** Sufficient information is available to establish default factors for PCBs load reduction credit resulting from foreseeable control measures implemented during this permit term (see information under C.12.b below). For treatment controls, the estimated load reductions can be calculated by multiplying the assumed land-use PCB yearly mass yield by the treated area and by a treatment efficiency factor. The load reduction resulting from cleaning up contaminated properties can be estimated by recognizing that the yield of the contaminated property will be reduced to an assumed background level over the course of site cleanup. The load reduction resulting from controlling PCBs in building materials during demolition can be estimated by estimating the amount of PCBs in the building, the fraction of those PCBs that would enter the storm drain system in the absence of controls, and the efficiency of control measures applied to the demolished building to prevent such PCBs release.
- C.12-10** Limited sampling data from Bay Area structures built between 1950 and 1980 suggest that PCB concentrations in caulks here are similar to those in other parts of North America and Europe. Samples collected in about 1350 buildings in Switzerland constructed between 1950 and 1980 found almost half the buildings contained PCBs in caulk, with most samples containing >100 ppm and 20 percent containing 10,000 ppm or more. In Bay Area samples, 40 percent contained > 50 ppm PCBs and 20% contained > 10,000 ppm PCBs. The study estimates that certain types of Bay Area structures built 1950-1980 contain a mid-range average of 4.7 kg PCBs per building. An estimated 6300 currently standing non-residential buildings in the MRP area were built between

1954 and 1974. The mid-range estimate of the total PCB mass in caulk in these buildings is 10,500 kg⁶⁴.

- C.12-11** Currently there are no protocols for identifying PCBs-containing structures at the time of demolition so that PCBs do not enter municipal storm drains. Some demolition sites, especially high-profile sites such as hospitals, bridges and sports arenas, comply with federal law (Toxic Substances Control Act) and State regulations (California Code of Regulations Title 22) that require a project proponent to determine the presence of PCBs and other hazardous substances and to follow applicable disposal requirements. Soil sampling data from such demolition projects indicate that significant concentrations of PCBs can be present in site soils. Such PCB-laden sediment, particularly at a demolition site without adequate controls, is transported by vehicle tracking, wind erosion or precipitation runoff to the storm drain. PCBs entering the storm drain system during dry weather are non-stormwater discharges that must be effectively prohibited pursuant to CWA § 402(p)(3)(B)(ii). PCBs that are discharged into storm drain systems and waters of the U.S. through stormwater runoff are appropriate for control in order to make progress in achieving the PCBs TMDL wasteload allocations for urban runoff, pursuant to CWA § 402(p)(3)(B)(iii).
- C.12-12** U.S. EPA has developed guidelines, available at its [“Steps to Safe Renovation and Abatement of Buildings That Have PCB-Containing Caulk”](#) website, for identifying and removing PCBs in building materials that can help in the effort to manage PCBs so that they do not enter municipal storm drains. In addition, during the Previous Permit term, starting in 2009, the Permittees participated in the grant-funded “PCBs in Caulk Project”, which addressed potential impacts of PCBs released into stormwater runoff during demolition or remodeling projects in the San Francisco Bay Area. This project fulfilled the permit requirement to investigate the costs, effectiveness, and technical feasibility of PCBs control measures to minimize the release of PCBs in caulks and sealants to stormwater runoff during demolition or remodeling projects. Products developed through this grant-funded project include a fact sheet for developers; a fact sheet on sampling methods; BMPs to control PCBs in caulk at demolition or renovation sites; a Model Implementation Process to incorporate a requirement to use BMPs into the municipal demolition permitting process; a training strategy to train and deploy municipal staff, such as hazardous material or building inspectors, to ensure proper implementation of BMPs; and a technical memorandum on relevant regulations and policies.
- C.12-13** This provision is consistent with a recent U.S. EPA memorandum⁶⁵ providing guidance on implementing TMDL WLAs in NPDES stormwater permits.

⁶⁴ Klosterhaus S. and McKee L. et al. 2014. *Polychlorinated Biphenyls in the exterior caulk of San Francisco Bay Area buildings, California, USA*. Environment International 66 (2014) 38–43.

⁶⁵ U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum “Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs.”

Specifically, this provision establishes clear and concrete milestones and deadlines (see C.12.a.iii) for the achievement of specific PCBs load reductions as well as other requirements (see C.12.b-h.), necessary to achieve receiving water limits of this permit term relative to the PCBs TMDL WLAs.

Specific Provision C.12 Requirements

Provision C.12.a. requires Permittees to implement control measures to achieve specific PCBs load reductions. In order to comply with this requirement, Permittees must identify the PCBs control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation.

In the first year, the Permittees have to identify watersheds and management areas and control measures sufficient to achieve the near term load reduction performance criterion (0.5 kg/yr by June 30, 2018). In subsequent years, the Permittees have to report annually any new watersheds and management areas and control measures necessary to achieve the ultimate PCB load reduction performance criterion (3 kg/yr) by June 30, 2020.

Moreover, Permittees must quantitatively demonstrate the load reductions achieved through use of the load reduction accounting scheme described below and/or further developed through the actions required under C.12.b. This provision element is critical to the successful implementation of the urban runoff requirements of the PCBs TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds, 2) a commitment to an implementation schedule, and 3) the quantification of load reductions resulting from control measure implementation.

This provision requires that Permittees achieve annual PCBs load reductions totaling 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. These load reductions are achievable with the associated deadlines and are based on an assessment of BMPs and control measures controls to reduce PCBs as further described below.

The PCBs load reductions achieved through implementation of Provision C.12.a can be estimated for a unit of activity for a number of anticipated control measures. The effectiveness and benefits of control measures remain uncertain because of limited implementation experience and relatively scarce data on control measure effectiveness for a range of conditions. However, there are sufficient data to develop a starting point for a reasonable system of estimating load reductions as a function of the scale and intensity of control measure implementation.

A simple approach for estimating the load reductions associated with certain control measures involves use of a land-use pollutant yield. A land-use yield is an estimate of the mass of a contaminant contributed by an area of a particular land-use per unit time. Essentially, different types of land uses yield different amounts of pollutants because land use types differ in their degree of contamination resulting from differing intensities of historical or ongoing use of pollutants in those land uses. PCBs were more heavily used in older industrial areas so older industrial land use areas yield a much higher mass of PCBs per unit area than newer urban land use areas where PCBs were never intensively used.

Permittees submitted land-use mass yields of PCBs in their 2014 Integrated Monitoring Report. When these yields were multiplied by the total area of various land-use categories, the estimated region-wide (the entire region that discharges to the Bay) PCBs load was lower than the load estimated in the PCBs TMDL by approximately a factor of 1.73. Therefore, the land-use yields were multiplied by a factor of 1.73 in order to normalize to the estimated baseline PCBs load in the PCBs TMDL and to agree with recent load estimates from runoff. The resultant (adjusted) mass yields for three land-use types shown below are based on data Permittees collected during the Previous Permit term and provide a reasonable means of establishing the PCBs load reductions for control measures implemented in corresponding areas⁶⁶. Permittees may refine these yields when they submit supporting documentation in their 2016 Annual Report.

- Old Industrial Land Use = 86.5 mg PCBs/acre/year
- Old Urban Land Use = 30.3 mg PCBs/acre/year
- New Urban areas and Other = 3.5 mg PCBs/acre/year
- Open Space = 4.3 mg/acre/year

The land-use yield provides a convenient way to estimate the load reduction of various sorts of control measure strategies. For example, when contaminated areas are **newly or redeveloped**, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). So, the amount of PCBs load reduction can be obtained by multiplying the area of new/redevelopment by the difference in yield (either old industrial minus new urban or old urban minus new urban, whichever pre-development land-use is applicable).

The PCBs load reductions for **retrofits or other treatment controls** (including green infrastructure) can be calculated by multiplying the area treated by the assumed land-use yield of the treated area multiplied by the efficiency factor of the treatment method (using a default value of 70 percent or an efficiency established through documentation of implemented method and reported in annual reports).

For **contaminated private properties** that are referred to the Water Board or other agencies for subsequent remediation, the estimated load reduction can be derived by assuming that the PCBs yield of the source area is reduced over the course of site cleanup. Source areas identified for the purpose of referral tend to have much higher areal yields, based on an analysis of the Ettie Street pump station watershed in Oakland. Information adapted from the IMR suggests that 3975 mg PCBs/acre/year is a reasonable interim estimate for the yield of such contaminated sites (Geosyntec 2015). The cleanups will be assumed to take ten years from the date of referral to the Water Board. The assumed result of the cleanup is that the PCBs yield will be reduced over the course of ten years from 3975 mg PCBs/acre/year to the old urban yield of 30.3 mg PCBs/acre/year, or a reduction of 3940 mg PCBs/acre/yr.

Fifty percent of this load reduction will be credited during this Permit term for properties that are referred to the Water Board during the first three years of the Permit term and for which Permittees implement enhanced operation and maintenance measures in the vicinity of the referred property. Often, contaminated properties have a “halo” of

⁶⁶ *PCBs Yield Coefficients for MRP 2.0*. Geosyntec Consultants. September 23, 2015.

contamination, and contaminated sediments in this halo can be transported to receiving waters through the stormwater conveyance system. Further, pollutants from the source area may continue to be transported offsite while remediation occurs. Therefore, enhancing operation and maintenance measures in areas immediately adjacent to the source area while the source property is being remediated is a priority to prevent PCBs transport to receiving waters. If enhanced maintenance measures are not implemented in the immediate vicinity of the referred property, the calculated load reduction will be recognized upon completion of the cleanup project.

PCBs load reductions resulting from implementing control measures to prevent discharge to storm drains of **PCBs in building materials during demolition** will be computed as: the mass of PCBs contained in applicable buildings⁶⁷ multiplied by the fraction of PCBs entering stormwater conveyances in the absence of controls multiplied by the effectiveness of controls preventing PCBs from entering stormwater conveyances. Each term in this calculation can be represented by a range of values, and information is limited on some of these terms (particularly the fraction of PCBs entering storm drains). However, reasonable values, derived from information available from Klosterhaus (2011) are:

- Mass of PCBs per building = 5 kg
- Number of regulated buildings demolished = 50
- Average fraction of PCBs that enters MS4s during demolition without controls = 1 percent
- Average effectiveness of controls at preventing PCBs from entering storm drains = 80 percent

Multiplying these parameters suggests that about 2 kg/yr of PCBs loads can be reduced by effectively controlling PCBs during demolition. The actual number of demolitions will vary, but 2 kg represents a reasonable estimate and is the basis for establishing the yearly load reduction credit for controlling the release of PCBs to storm drains from such demolitions. If a Permittee implements a control program consistent with these assumptions, a share of the 2 kg/yr credit, pro-rated by population, will be allocated to that Permittee. Permittees may propose an alternative means (other than population-based) of allocating the permit-area-wide load reduction credit associated with implementing C.12.f with the 2019 Annual Report.

Permittees will also likely employ **enhanced operation and maintenance control measures** to reduce loads of mercury and PCBs. These strategies include: street sweeping, drain inlet cleaning, pump station maintenance, PCBs captured by full trash capture devices, etc. It is not possible to state, in advance, specific parameters to allow for load reduction estimates. However, the load reduction calculation is straightforward. The pollutant load reduction (either baseline or enhanced) is the product of the volume of material collected by the control measure multiplied by the percent of the collected material that is sediment multiplied by the density of that sediment multiplied by the concentration of the pollutant in that sediment. The load reduction credit is then simply

⁶⁷ Applicable buildings include buildings (excluding single family residential and wood frame buildings) constructed from 1950 through 1980 with PCBs concentration in caulks/sealants greater than 50 ppm.

the difference between the load reductions achieved with enhanced effort and those achieved with a baseline level of effort (which may be zero if the control measure is new rather than an increased intensity of an existing measure).

PCBs load reduction from other activities can be similarly established and documented through quantification of the amount of material (e.g., sediment or water or other waste) prevented from entering receiving waters multiplied by the concentration of PCBs in that material. The load reduction calculated for all implemented measures shall be summed and compared to the load reduction requirements in Tables 12.1 and 12.2. Permittees can demonstrate compliance with the load reduction requirements by summing the load reduction assigned to each type of activity they undertake. For example, if Permittees meet the Permit requirements for demolitions of regulated buildings (C.12.f) designed to achieve the control effectiveness consistent with the calculation outlined above, then a permit-area-wide load reduction of 2 kg/yr will be applied to the 3 kg/yr by the June 30, 2020, load reduction requirement. Further, Permittees would account for the area treated by green infrastructure, apply the appropriate land use PCB yield, and sum the load reduction over all such treatment installations. Similarly, the calculated load reduction resulting from property referrals and enhanced operation and maintenance can be accounted for using the approach described previously. Summing up all PCBs load reductions from all relevant control measures would constitute the permit-area-wide PCBs load reduction, county-specific, or Permittee-specific PCBs load reduction. Permittees, as a group, are encouraged to implement PCBs controls in the locations with the greatest opportunities for load reduction and be held accountable as a group. However, if the overall load reduction criteria (for all Permittees combined) are not met, the Permit provides an accountability mechanism in the form of load reduction performance criteria for each county in the permit area, calculated according to the proportions used to establish county-specific load allocations in the PCBs TMDL. For example, the load allocation for all Permittees within Alameda County in the PCBs TMDL is 0.5 kg/yr. The estimated baseline load according to the TMDL is 5 kg/yr. This represents achieving a load reduction over 20 years of 4.5 kg/yr (of the 18 kg/yr reduction from urban runoff sources to the Bay overall). However, the Permittees' jurisdictions have an estimated total load reduction responsibility of 14.4 kg/yr, because some of the urban runoff load comes from areas not under the Permittees' jurisdiction. Therefore, the Permittees within Alameda County are responsible for 4.5/14.4 (~ 31.25 %) of the load reductions from the permit area. Applying this same fraction to the required 3,000 g/yr load reduction results in a load reduction for the Alameda County Permittees of 940 g/yr. The load reduction for other counties (e.g., all Contra Costa Permittees combined, all Santa Clara Permittees combined, all San Mateo Permittees combined, and Solano Permittees [Suisun City, Vallejo, Fairfield] combined) can be derived similarly by subtracting the TMDL load allocations from the baseline load estimates and then dividing by 14.4 and then multiplying by either 500 g/yr (for the June 30, 2018, load reductions) or 3,000 g/yr (for the June 30, 2020, load reductions).

Load reduction opportunities almost certainly vary by jurisdiction. Some jurisdictions (e.g., those with a higher proportion of old industrial land use) may have more PCBs-contaminated sites and, hence, greater potential opportunities to implement control measures to reduce loads. Further, the total PCBs load reduction across the entire area

covered under this Permit is relevant to the recovery of San Francisco Bay. Therefore, as long as the total load reductions (500 g/yr by June 30, 2018, and 3 kg/yr by June 30, 2020) are achieved, the load reduction distribution among the counties is much less of a concern.

However, if the permit-area-wide total load reduction performance criteria are not achieved, the Permittees in counties meeting the county-level load reduction criteria in the Permit will be deemed in compliance with the performance criteria. If both the permit-area-wide total load reduction criterion and county-specific load reduction criterion are not achieved, those Permittees will be deemed in compliance if they have achieved load reductions consistent with their proportion of the county total established under C.12.b.iii(1). Allocation of the county-wide load reduction responsibility to individual Permittees is based on the fraction of county population in each Permittees' municipality. This is consistent with the assumptions and requirements of the PCBs TMDL in that the permit-area-wide load allocation was distributed to each county based on the proportion of permit-area-wide population contained in each county. Other methods could be used to distribute the county-wide PCBs load reduction performance criteria to individual municipalities (e.g., proportion of county total of certain land-uses associated with PCB presence contained in each municipality). Permittees may propose another alternative as part of reporting on C.12.b.iii(2).

Provision C.12.b. requires Permittees to develop and implement an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this Permit. The default approach for establishing load reductions for various implementation activities is described above. Early in the Permit term (2016), Permittees will submit documentation supporting this default approach for load reduction accounting along with a description of the data to be collected to establish load reduction value. In particular, C.11/12.b.iii(1) requires Permittees to submit specific details showing how they will perform the calculations to account for mercury and PCBs load reductions from all types of control measures for the reduction of these pollutants. This information includes what data will be used to assign treated areas; how to assign land use to select a yield; and how material will be sampled to determine the contaminant concentration (for control measures requiring such information). Permittees should also identify the types of supporting information that will be submitted so that the calculations can be reproduced. As Permittees gain implementation experience and collect information on this implementation, they may request refinement of the accounting system for use in subsequent Permit terms.

Permittees are encouraged to build on the framework developed in response to a Previous Permit requirement and submitted by Permittees in January 2014 in their Integrated Monitoring Report. This could include updating and in some cases extending the framework presented in that document, justifying assumptions and selected parameters used for each type of control measure, and indicating what information will be collected and submitted to calculate the load reduction for each implemented control measure. The accounting scheme for use in this Permit term and summarized above along with the

refined accounting scheme submitted near the end of the permit term (for use in subsequent Permits) must both be submitted for Executive Officer approval.

Many of the legacy sources of PCBs are found in Bay margins contaminated by historical industrial activity. These legacy sources may be contributing to storm drain runoff conveyances, but Permittees may have jurisdictional challenges in addressing the sources in private property. In addition, Permittees are responsible for contamination in public rights of way. Permittees are expected to make diligent efforts both to address contamination on public property and to refer source properties to the Water Board for possible cleanup and abatement.

Provision C.12.c. requires Permittees to implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions of 120 g/year by June 30, 2020. The county-specific responsibilities for this load reduction are shown in Table 12.2 of the Permit. These county-specific green infrastructure load reduction requirements were derived using the same methodology described above for Provision C.12.a.

Some Bay Area drainages contain notably elevated PCBs concentrations in suspended or bedded sediment (e.g., > 500 ppb in bedded sediment). A recent analysis of soil PCBs and mercury data collected in the Bay Area identifies 15 sites where maximum concentrations exceed 3.8 mg/kg for PCBs and 1.6 mg/kg for total mercury. Areas with moderately high PCBs concentrations (e.g., 100-500 ppb) were found throughout areas where historical industrial activity involved use of PCBs (McKee and Yee 2015). Placing green infrastructure in highly- and moderately-contaminated areas will form an important element in achieving the PCBs TMDL-required load reductions. However, green infrastructure implementation is a long-term proposition and there is value in placing green infrastructure across the broader landscape to intercept PCBs before they are discharged to receiving water.

To ensure that Bay Area municipalities are working effectively and expeditiously in implementing appropriate green infrastructure controls to reduce loads of mercury, PCBs, and other pollutants of concern, the Permit requires Permittees to prepare a reasonable assurance analysis that rigorously and quantitatively demonstrates PCBs load reductions of at least 3 kg/yr throughout the permit area will be achieved by 2040 through implementation of green infrastructure throughout the permit area. The effort to prepare a reasonable assurance analysis is described above under C.11.c.

Provision C.12.d. requires Permittees to prepare a plan and schedule for PCBs control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations. The Permit requires that this plan must: identify all technically and economically feasible PCBs control measures (including green infrastructure projects) to be implemented; include a schedule according to which these technically and economically feasible control measures will be fully implemented; and provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation:

The PCBs TMDL anticipated the challenge of achieving the urban runoff load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that

“... achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and accomplished all of the following:

- *A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;*
- *Documentation has been prepared that demonstrates that all technically and economically feasible and cost-effective control measures recognized by the Water Board have been fully implemented, and evaluates and quantifies the PCBs load reduction of such measures;*
- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.”*

Provision C.12.d provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. The load reductions for PCBs are difficult and time-consuming to achieve because of the distribution of sources in the landscape; challenges associated with finding and reducing these existing sources; and unpredictability related to demolition of PCBs containing structures. Further, some part of the expected PCB load reduction will come from long-term implementation of control strategies (like green infrastructure) that extend beyond the current implementation timeframe of the TMDL. The long-term plan and schedule required by this provision will help lay the foundation for an implementation timeframe that is longer than that stated in the TMDL.

Provision C.12.e. requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations should be on structures installed during this era. The Washington Department of Ecology discovered that PCBs-containing caulk (sealant) was used inside the City of Tacoma’s storm drains during a 1970s repair. There is reason to believe that such use was not isolated to this one location. The sampling and analysis required by this Provision C.12 element will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

Provision C.12.f. requires Permittees to develop a protocol for controlling PCBs during building demolition so that PCBs are not transmitted to storm drains via vehicle trackout, airborne releases, soil erosion or stormwater runoff during or after demolition. Because this is a new management practice, three years are allotted to working with entities, such as the Bay Air Quality Management District, U.S. EPA, and waste management entities,

to coordinate oversight functions and otherwise develop a coordinated protocol. After the development period, Permittees shall implement the protocol such that PCBs are controlled during the demolition of applicable structures so that they do not enter municipal storm drains. During this Permit term, applicable structures are limited to potential PCB-containing industrial, public, and commercial structures. Single-family residential and wood frame structures are excluded. In future permits, other types of structures and renovations may be included in the protocol.

The Integrated Monitoring Report (IMR)⁶⁸ presents estimates of the mass of PCBs per building (constructed or renovated prior to 1979) ranging from 0.6-16 kg and contribution to stormwater ranging from 0.8 to 4000 grams/year. This is one of the largest known sources of PCBs, although it is distributed throughout the region. For a building with 4.7 kg of PCBs and current control measures of medium effectiveness, there may be 280 grams of PCBs released to stormwater during demolition, assuming control measures are only moderately effective. If only control measures of low effectiveness were in place, such a building would release 560 grams PCBs during demolition.

Permittee 2014 Annual Reports, New and Redevelopment Section "Projects Approved" tables (C.3.b.v.(1)) provided a means to gauge the potential number of redevelopment projects involving applicable structures. While these tables are not required to list all the information necessary to determine if applicable structures will be demolished during redevelopment, in some cases enough information is provided. In 6 of the 11 Permittees reviewed, potential PCB-containing structures are planned to be demolished, including one project in which 14 buildings likely built between 1950 and 1980 will be demolished.

Water Board staff also contacted Bay Area waste management entities, such as county recycling and construction debris recovery programs. Brief discussions revealed the following:

- In general, demolition project proponents must submit debris recovery plans to these entities prior to commencing demolition. These plans could be modified to include information on the likelihood and/or actual existence of PCB-containing materials in the structure.
- Waste management entities tend to have technical advisory committees that could advise on appropriate approaches/frameworks for controlling PCBs during demolition so that they do not enter storm drains.
- Applicable structures are a small subset of all demolitions in the Bay Area.
- Some cities use software for recording demolition projects that could be modified by adding a form(s) for applicable structures.
- There are a limited number (approximately 30-40) of construction and debris processing facilities in the Bay Area, and they are listed on county web sites. At least two of these facilities are known PCB-containing sites, although both include metal processing facilities in addition to other debris recycling.
- One waste management entity has produced a video documenting a large-scale demolition project at a former Army Base that had a variety of hazardous

⁶⁸ Integrated Monitoring Report Part B: PCB and Mercury Loads Avoided and Reduced via Stormwater (IMR). Prepared by Geosyntec Consultants for the Bay Area Stormwater Management Agencies Association. 2013.

materials to dispose of, including PCBs. Another pointed to You-Tube videos showing how to remove PCB-containing caulk prior to demolition.

These facts (see also C.10, C.11 and C.12 above) indicate that a workable protocol for controlling PCBs during demolition so that they do not enter storm drain systems could be built upon existing demolition requirements and utilize existing information resources.

Some municipalities may have no applicable structures (i.e., the only structures that existed pre-1980 were single-family residential or wood-frame structures). Such Permittees may provide documentation acceptable to the Executive Officer in their 2017 Annual Reports to seek exemption from the requirement to develop a PCBs demolition control program. This allows time for compilation of this documentation, such as historic maps or other historic records, and for determining which Permittees are exempt prior to year the July 1, 2019₂ requirement to begin implementing the protocols.

Provision C.12.g. There are still uncertainties surrounding the magnitude and nature of PCBs reaching the Bay in urban runoff and the ultimate fate of such PCBs, including biological uptake. Provision C.12.g requires that Permittees ensure that fate and transport studies of PCBs in urban runoff are completed. The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

Provision C.12.h. requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.13. Copper Controls

Chronic and acute site-specific objectives (SSOs) for dissolved copper have been established in all segments of San Francisco Bay. The plan to implement the SSOs and ensure the achievement and ongoing maintenance of the SSOs in the entire Bay includes three types of actions for urban runoff management agencies. These actions are implemented through this Permit as provisions to control urban runoff sources of copper.

The control measures for urban runoff target significant sources of copper identified in a report produced in 2004 for the Clean Estuary Partnership.⁶⁹ This report updated information on sources of copper in urban runoff, loading estimates and associated level of uncertainty, and summarized feasible control measures and priorities for further investigation. Accordingly, the Permit provisions target major sources of copper including architectural copper, copper pesticides, and industrial copper use.

Fact Sheet Findings in Support of Provision C.13.

- C.13-1** Urban runoff is a conveyance mechanism by which copper reaches San Francisco Bay.
- C.13-2** Copper has the reasonable potential to cause or contribute to exceedances of copper water quality standards in San Francisco Bay.
- C.13-3** SSOs for dissolved copper have been adopted for all segments of San Francisco Bay.
- C.13-4** The Permit requirements to control copper to the MEP are necessary to implement and support ongoing achievement of the SSOs.
- C.13-5** One of the major sources of copper to urban runoff has been addressed through passage of Senate Bill 346 in 2010, which requires brake pad manufacturers to reduce the use of copper in brake pads sold in California to no more than 5% by weight by 2021, and no more than 0.5% by 2025. The law also provides an objective process to ensure that any new brake materials meet all applicable safety and performance standards. To make sure that new materials will not cause future environmental problems, the law requires brake manufacturers to screen potential alternatives for their impacts on human health and the environment using the Toxic Information Clearinghouse, and to select less hazardous options.
- C.13-6** A scientific uncertainty regarding sediment toxicity was identified during the development of SSOs for copper. Bay sediment copper concentrations are somewhat elevated above the natural background (from native soils). Local soils contain 30- 35 ppm (DW, dry weight) based on deep (> 2 meter) sediment core results for SF Bay. The copper ERL (effects range low) is 34 ppm (DW)

⁶⁹ TDC (TDC Environmental), 2004. *Copper Sources in Urban Runoff and Shoreline Activities*. Prepared for the Clean Estuary Partnership.

and the ERM (effect range median) is 240 ppm (DW). Thus, the natural concentration of local soils is very close to the ERL. There has never been an exceedance of the ERM in the 975 samples collected and analyzed through RMP data. The maximum copper sediment concentration ever recorded in RMP samples (94 ppm DW) is well below the LC50 of the amphipod *Eohaustorius estaurius* (534 ppm) or the amphipod crustacean *Hyaella azteca* (260 ppm). Surface sediment copper concentrations have trended lower over the last 20 years according to monitoring in the Bay. The median surface concentration of copper was 40 ppm (DW) during the period 1993-2004 and dropped to 38 ppm in 2005-2014. This reduced concentration occurred despite significant population increases in the Bay Area and despite the fact that much more sampling effort was conducted in the shallower parts of the Bay (where copper concentrations would be expected to be higher due to human activities and urban sources) during the latter period because of a re-design of RMP sampling strategies. There was some evidence of possible copper-related toxicity in the late 1990s, but there has not been additional evidence of this phenomenon. The possible sediment toxicity occurred in the northern portions of San Francisco Bay (Suisun Bay and San Pablo Bay) where sediment copper concentrations are higher. However, the decrease in median sediment copper concentrations in the northern estuary from the time period 1993-2004 (52 ppm DW) to 2005-2014 (45 ppm DW) has been even more pronounced than the reduction for the Bay as a whole. Because there has not been additional evidence of copper sediment toxicity and copper concentrations in surface sediments appear to be decreasing over time, Permit requirements to further investigate copper sediment toxicity in San Francisco Bay were satisfied by information collected under MRP 1.0 and are no longer needed. If more evidence of such toxicity does appear, this requirement may be re-instated.

- C.13-7** A scientific uncertainty regarding the olfactory impairment of salmonids was identified during development of SSOs for copper. Exposure to dissolved copper has been shown to cause olfactory impairment at relatively low concentrations in freshwater fish, resulting in an impaired avoidance response to predators. When the SSOs were established, studies were planned to address whether or not this phenomenon occurred in estuarine water. The studies⁷⁰ were supported in part through requirements in the Previous Permit and were conducted by David Baldwin of NOAA's Northwest Fisheries Science Center. Dr. Baldwin measured the firing of neurons in response to exposure to odorant chemicals. The studies indicate that salmon in saline or moderately saline water are much less sensitive than salmon in freshwater, and that the potential effect of copper on salmon olfaction is not a concern in the Bay.

⁷⁰ David Baldwin, NOAA Fisheries, Northwest Fisheries Science Center, 2015. *Impact of dissolved copper on the olfactory system of juvenile salmon, Phase II: Effect of estuarine salinity on olfactory toxicity.*

Specific Provision C.13. Requirements

Provision C.13.a. Copper is used as an architectural feature in roofs, gutters and downspouts. When these roofs are cleaned with aggressive cleaning solutions, substantial amounts of copper can be liberated. Provision C.13.a for architectural copper involves a variety of strategies ranging from BMPs to prohibition against discharge of these cleaning wastes to the storm drain.

Provision C.13.b. Copper is commonly used as an algaecide in pools, spas, and fountains. Provision C.13.b prohibits discharge to the storm drain of copper-containing wastewater from such amenities.

Provision C.13.c. Some industrial facilities likely use copper or have sources of copper (e.g., plating facilities, metal finishers, and auto dismantlers). This control measure requires municipalities to include these facilities in their inspection program plans.

C.14. Bacteria Controls

The purpose of this provision is to implement the stormwater runoff and dry weather flow (urban runoff) requirements of the San Pedro Creek and Pacifica State Beach Bacteria TMDL (TMDL) and reduce bacteria loads to make substantial progress toward achieving the urban runoff bacteria wasteload allocations established for the TMDL.

Fact Sheet Findings in Support of Provision C.14

- C.14-1** This Permit implements the Basin Plan amendment adopted by the Water Board on November 14, 2012, that establishes a TMDL and an Implementation Plan for bacteria in San Pedro Creek and at Pacifica State Beach. The State Water Board and U.S. EPA have also approved this Basin Plan amendment.
- C.14-2** The implementation plan requires the City of Pacifica and San Mateo County (the Pacifica and San Mateo Permittees) to implement bacteria control measures, conduct education and outreach to others, and conduct water quality monitoring efforts. Control measures implemented by the Pacifica and San Mateo Permittees shall reduce bacteria in urban runoff to achieve TMDL wasteload allocations.
- C.14-3** The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s and Caltrans facilities. The allocations are expressed in terms of allowable exceedances of single sample bacteria water quality objectives for the water contact recreation beneficial use and shall be achieved by August 2021 for Pacifica State Beach and August 2028 for San Pedro Creek.
- C.14-4** The Pacifica and San Mateo Permittees may comply with any requirement of this provision through a collaborative effort.

Specific Provision C.14 Requirements

Provision C.14.a. requires the Pacifica and San Mateo Permittees to implement various control measures and education and outreach activities to achieve bacteria load reductions. In order to comply with this requirement, the Pacifica and San Mateo Permittees must implement measures such as: effectively prohibit potential illicit discharges to the storm drain from the sanitary sewer collection system; address bacteria discharges from existing and future commercial horse facilities; install dog waste-clean-up signs, waste bag dispensers, and trash receptacles at high priority areas; develop and implement a visual inspection and clean-up plan for high dog waste accumulation areas; and develop and implement an enhanced public outreach and education campaign for managing pet waste. This provision also requires the Pacifica and San Mateo Permittees to modify or refocus control measure implementation efforts as appropriate.

This provision is critical to the successful implementation of the urban runoff requirements for the TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds or locations, 2) a commitment to an implementation schedule, and 3) the quantification of the benefit resulting from control measure implementation.

Provision C.14.b. requires the Pacifica and San Mateo Permittees to conduct a water quality monitoring program to assess attainment of wasteload allocations. The monitoring and reporting requirements of Provision C.14 are authorized under Clean Water Act § 308, 40 C.F.R. §§ 122.26(d)(2), 122.41(h),(j) and (l), 122.42(c), 122.44(i) and 122.48, and Water Code § 13383. In order to comply with this requirement, the Pacifica and San Mateo Permittees are required to monitor bacteria levels in San Pedro Creek and at Pacifica State Beach and analyze, summarize, and report the results of the monitoring to the Water Board. Further, they must provide an annual report of the quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives. This provision is necessary to determine whether or not wasteload allocations are being attained, so additional or enhanced measures are implemented, if necessary.

Provision C.14.c. requires the Pacifica and San Mateo Permittees to conduct a water quality monitoring program to 1) better characterize bacteria sources and 2) evaluate the effectiveness of the bacteria control measures. The results of the monitoring shall be reported to the Water Board on an annual basis. The findings from these assessments will be used throughout this and future Permit terms to revise, refocus, and enhance bacteria control measures to make them as effective and efficient as possible. Future permits will be based on an updated assessment of bacteria sources and control measure effectiveness. This provision is necessary to allow the Pacifica and San Mateo Permittees to identify and implement effective BMPs in an efficient manner.

C.15. Exempted and Conditionally Exempted Discharges

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F)₂ and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators “to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain non-stormwater discharges. Illicit discharge means “any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities” (40 CFR 122.26(b)(2)).

Fact Sheet Findings in Support of Provision C.15.

Prohibition A.1. effectively prohibits the discharge of non-stormwater discharges into the storm sewer system. However, certain types of non-stormwater discharges may be exempted from this prohibition if they are unpolluted and do not violate water quality standards. Other types of non-stormwater discharges may be conditionally exempted from Prohibition A.1. if the discharger employs appropriate control measures and BMPs prior to discharge, and monitors and reports on the discharge.

Removal of Conditional Exemption for Planned and Unplanned Discharges of the Potable Water System

The Previous Permit-contained requirements for planned and unplanned discharges from the potable water systems owned and/or operated by Permittees who are water purveyors. The discharges were conditionally exempted provided the Permittees complied with the BMP, monitoring, and reporting requirements in the Previous Permit. The requirements were necessary because potable water discharges contain chlorine and chloramines, two very toxic chemicals to aquatic life, and can cause erosion, scouring of stream and creek banks, and sedimentation. The conditional exemption and requirements were included as an interim measure until such time an NPDES permit regulating potable water discharges was adopted. The State Water Board has since adopted the statewide General NPDES Permit for Drinking Water System Discharges to Waters of the United States, Order WQ 2014-0194-DWQ (Potable Water General Permit) on November 18, 2014. Therefore, the conditional exemption and requirements for planned and unplanned discharges from the Permittees’ potable water systems is no longer necessary. The Permittees should seek coverage under the Potable Water General Permit for their potable water system discharges. NPDES-permitted discharges, such as those permitted by the Potable Water General Permit, are exempt from Discharge Prohibition A.1.

Specific Provision C.15. Requirements

Provision C.15.a. Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are exempted from Discharge Prohibition A.1. if such discharges are unpolluted and do not violate water quality standards. If any exempted non-stormwater discharge is identified as a source of pollutants to receiving waters, the discharge shall be addressed as a conditionally exempted discharge and must meet the requirements of Provision C.15.b.

Provision C.15.b. Conditionally Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are conditionally exempted from Discharge Prohibition A.1. if they are identified by Permittees or the Executive Officer as not being sources of pollutants to receiving waters. To eliminate adverse impacts from such discharges, project proponents shall implement appropriate pollutant control measures and BMPs, and where applicable, shall monitor and report on the discharges in accordance with the requirements specified in Provision C.15.b. The intent of Provision C.15.b.'s requirements is to facilitate Permittees in regulating these non-stormwater discharges to the storm drains since the Permittees have ultimate responsibility for what flows in those storm drains to receiving waters. For all planned discharges, the nature and characteristic of the discharge must be verified prior to the discharge so that effective pollution control measures are implemented, if deemed necessary. Such preventative measures are cheaper by far than post-discharge cleanup efforts.

Provision C.15.b.i.(1). Pumped Groundwater from Non Drinking Water

Aquifers. These aquifers tend to be shallower than drinking water aquifers and more subject to contamination. The wells must be purged prior to sample collection. Since wells are purged regularly, this section of the Permit requires twice a year monitoring of these aquifers. Discharges of pumped groundwater from nondrinking water aquifers, which are owned and/or operated by Permittees who pump groundwater as drinking water, are conditionally exempted as long as the discharges meet the requirements in this section of the Permit.

Provision C.15.b.i.(2). Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains.

This section of the Permit encourages these types of discharges to be directed to landscaped areas or bioretention units, when feasible. If the discharges cannot be directed to vegetated areas, it requires testing to determine if the discharge is uncontaminated. Uncontaminated discharges shall be treated, if necessary, to meet specified discharge limits for turbidity and pH.

Provision C.15.b.ii. Air Conditioning Condensate. Small air conditioning units are usually operated during the warm weather months. The condensate from these units is uncontaminated and unlikely to reach a storm drain or waters of the State because it tends to be low in volume and tends to evaporate or percolate readily. Therefore, condensate from small air conditioning units should be discharged to landscaped areas or the ground. Commercial and industrial air conditioning units tend to produce year-round continuous flows of condensate. It may be difficult to direct a continuous flow to a landscaped area large enough to accommodate the volume. While the

condensate tends to be uncontaminated, it picks up contaminants on its way to the storm drain and/or waters of the State and can contribute to unnecessary dry weather flows. Therefore, discharges from new commercial and industrial air conditioning units should be discharged to landscaped areas, if they can accommodate the continuous volume, or to the sanitary sewer, with the local sanitary sewer agency's approval. If none of these options are feasible, air conditioning condensate can be directly discharged into the storm drain. If descaling or anti-algal agents are used to treat the air conditioning units, residues from these agents must be properly disposed of.

Provision C.15.b.iii. Emergency Discharges of the Potable Water. Potable water discharges contribute pollution to water quality in receiving waters because they contain chlorine or chloramines, two very toxic chemicals to aquatic life. Potable water discharges can cause erosion and scouring of stream and creek banks, and sedimentation can result if effective BMPs are not implemented. This section of the Permit acknowledges that in cases of emergency discharge, such as from firefighting and disasters, priority of efforts shall be directed toward life, property, and the environment, in that order. Therefore, Permittees are required to implement BMPs that do not interfere with immediate emergency response operations or impact public health and safety. Reporting requirements for such events shall be determined by Water Board staff on a case-by-case basis.

Provision C.15.b.iv. Individual Residential Car Washing. Soaps and automotive pollutants such as oil and metals can be discharged into storm drains and waterbodies from individual residential car washing activities. However, it is not feasible to prohibit individual residential car washing because it would require too much resources for the Permittees to regulate the prohibition. This section of the Permit requires Permittees to encourage residents to implement BMPs such as directing car washwaters to landscaped areas, using as little detergent as possible, and washing cars at commercial car washing facilities.

Provision C.15.b.v. Swimming Pool, Hot tub, Spa, and Fountain Water Discharges. These types of discharges can contain high levels of chlorine and copper. Permittees shall prohibit the discharge of such waters that contain chlorine residual, copper algacide, filter backwash, or other pollutants to the storm drains or to waterbodies. High flow rates into the storm drain or a waterbody could cause erosion and scouring of the stream or creek banks. These types of discharges should be directed to landscaped areas large enough to accommodate the volume or to the sanitary sewer, with the local sanitary sewer's approval. If these discharge options are not feasible and the swimming pool, hot tub, spa, or fountain water discharges must enter the storm drain, they must be dechlorinated to non-detectable levels of chlorine and they must not contain copper algacide. Flow rate should be regulated to minimize downstream erosion and scouring. We strongly encourage local sanitary sewer agencies to accept these types of non-stormwater discharges, especially for new and rebuilt ones where a connection could be achieved with marginal effort. This provision also requires Permittees to coordinate with local sanitary agencies in these efforts.

Provision C.15.b.v.i. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering. Fertilizers and pesticides can be washed off of landscaping and discharged into storm drains and waterbodies. However, it is not feasible to prohibit excessive irrigation because it would require too much resource for the Permittees to regulate such a prohibition. It is also not feasible for individual Permittees to ban the use of fertilizers and pesticides. This section of the Permit requires Permittees to promote and/or work with potable water purveyors to promote measures that minimize runoff and pollutant loading from excess irrigation, such as conservation programs, outreach regarding overwatering and less toxic options for pest control and landscape management, the use of drought tolerant and native vegetation, and to implement appropriate illicit discharge response and enforcement for ongoing, large-volume landscape irrigation runoff to the storm drains.

C.16. Discharges to Areas of Special Biological Significance

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority:

In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amendment to the Ocean Plan on October 16, 2012, and the plan was subsequently approved by the State Office of Administrative Law and U.S. EPA. The State Water Board is responsible for reviewing the Ocean Plan water quality standards and for modifying and adopting standards in accordance with CWA section 303(c)(1) and CWC section 13170.2. Pursuant to CWA sections 13263 and 13377, this Permit implements the Ocean Plan. In accordance with the Ocean Plan, the State Water Board granted an exception to the prohibition of stormwater discharges to Areas of Special Biological Significance (ASBSs), as discussed further below.

Fact Sheet Findings in Support of Provision C.16.

The Ocean Plan prohibits the discharge of waste to designated ASBSs. ASBSs are designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. On March 20, 2012, the State Water Board approved Resolution No. 2012-0012, approving a general exception to the Ocean Plan prohibition against discharges to ASBSs for certain nonpoint source discharges and NPDES-permitted municipal storm water discharges (ASBS Exception), as long as those discharges are covered under an appropriate authorization to discharge, such as this Order and comply with the Special Protections contained in Attachment B (Special Protections) to that resolution, among other requirements. The ASBS Exception was subsequently amended by State Water Board Resolution No. 2012-0031, which required pollutant reductions to be achieved within six years, in accordance with ASBS Compliance Plans. This provision applies to discharges from the County of San Mateo into the James V. Fitzgerald Marine Reserve ASBS. The provision authorizes the County of San Mateo's stormwater discharge as set forth in the provision and implements the Ocean Plan and the exceptions granted under it by the State Water Board to allow the County of San Mateo to discharge stormwater into the ASBS. The requirements of the Provision are from the ASBS Exception and its Special Protections, which are incorporated into the Order as Attachment E.

Specific Provision C.16.5 Requirements

Provision C.16.5.a. (Green Infrastructure Planning and Implementation), Provision C.16.5.b. (Inspection for Construction Site Control at Hillside Projects), and Provision C.16.5.c. (Trash Load Reductions) extend the deadlines for the specific Permit tasks that do not exist or are on a less aggressive timeline in the East County Permittees' Previous Permit.

Provision C.16.5.d. (Mercury Controls) exempts the East County Permittees from Provision C.11 – Mercury Controls because the East County Permittees are not named as point sources of mercury in the San Francisco Bay Mercury TMDL. Therefore, they do not have San Francisco Bay Mercury TMDL wasteload allocations (WLAs) for mercury (See Provision 16.5.h concerning compliance with the Delta Methylmercury TMDL).

Provision C.16.5.e. (Polychlorinated Biphenyls (PCBs) Controls) exempts the East County Permittees from Provision C.12 – PCBs Controls because the East County Permittees are not named as point sources of PCBs in the San Francisco Bay PCBs TMDL. Therefore, they do not have San Francisco Bay Mercury TMDL WLAs for PCBs.

Provision C.16.5.f. (Diazinon and Chlorpyrifos Controls) implements the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL. The Central Valley Regional Water Board adopted a Basin Plan amendment including a TMDL for diazinon and chlorpyrifos in the Sacramento-San Joaquin Delta Waterways (Delta Waterways)⁷¹ on June 23, 2006. The State Water Board and U.S. EPA both approved this Basin Plan Amendment. This TMDL includes waste load allocations (WLAs) for diazinon and chlorpyrifos applicable to the East County Permittees.

This TMDL states that levels of diazinon and chlorpyrifos shall not exceed the sum (S) of one (1) as defined below:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

- C_D = diazinon concentration in ug/L of point source discharge
- C_C = chlorpyrifos concentration in ug/L of point source discharge
- WQO_D = acute or chronic diazinon water quality criterion (0.160 and 0.100 ug/L, respectively)
- WQO_C = acute or chronic chlorpyrifos water quality criterion (0.025 and 0.015 ug/L, respectively)

⁷¹ The Delta Waterways include only those reaches that are located within the "Legal" Delta, as defined in Section 12220 of the California Water Code (CWC). The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin Appendix 42 lists the Delta Waterways to which the site-specific diazinon and chlorpyrifos water quality objectives and implementation and monitoring provisions apply.

For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero.

The East County Permittees' previous Permit included requirements for the Diazinon and Chlorpyrifos TMDL. The Final Compliance Deadline for this TMDL was December 1, 2011.

The East County Permittees submitted a letter dated September 13, 2018, demonstrating their discharge has not exceeded the TMDL WLAs or water quality objective concentrations for diazinon and chlorpyrifos since 2008. The letter summarizes the results of diazinon and chlorpyrifos monitoring from 2012-2014 under Contra Costa Clean Water Program's Pollutants of Concern Load Monitoring at Lower Marsh Creek. This sampling location is directly downstream from one of the largest continuous urbanized areas in East County and samples characterized critical storm runoff events.

In addition, the letter includes diazinon and chlorpyrifos summary monitoring data from other County locations, in areas with both urban and agricultural lands from 2001-2017 by three programs: the State of California's Surface Water Ambient Monitoring Program (SWAMP), the Department of Pesticide Regulation (DPR) Statewide Pesticide Monitoring Program, and the San Francisco Estuary Institute (SFEI) Small Tributaries Loading Strategy. The SWAMP monitoring data includes 16 chlorpyrifos samples with no detections or exceedances, and 16 diazinon samples with 9 detections and 9 exceedances from 2001–2005. The DPR monitoring data includes 13 chlorpyrifos samples with 1 detection and 1 exceedance, and 13 diazinon samples with 1 detection and 1 exceedance from 2008-2009 and 2017. The chlorpyrifos and diazinon exceedances occurred in 2009 and could have been from agricultural sources. The SFEI monitoring data includes 5 chlorpyrifos samples with no detections or exceedances, and 5 diazinon samples with no detections or exceedances from 2013-2014. The monitoring data from SWAMP, DPR, and SFEI show that water quality objectives for diazinon and chlorpyrifos have not been exceeded since 2009, providing additional data to reflect the trend of reduced diazinon and chlorpyrifos concentrations in urban runoff.

The decline in concentrations of diazinon and chlorpyrifos in East County is consistent with observations of declines in urban runoff concentrations in the Central Valley Watershed following cancellation of urban uses of these chemicals. U.S. EPA cancelled the sale of nearly all non-agricultural diazinon and chlorpyrifos products by 2004. However, residents could still be storing diazinon and chlorpyrifos products, and old supplies remain legal to use. Because use of these products is still allowed and out of the direct control of the East County Permittees, there still is potential that such use could make consistent attainment of numeric effluent limits infeasible. The existing monitoring for toxicity and pesticides in Provision C.8. will be sufficient to demonstrate continued compliance with the diazinon and chlorpyrifos TMDL.

Therefore, the East County Permittees are required to implement Provision C.16.5.f. to maintain WLAs for diazinon and chlorpyrifos, and no additional actions are needed for the East County Permittees to comply with this TMDL.

Provision C.16.5.g. (Methylmercury Monitoring) requires methylmercury monitoring to assess compliance with the TMDL and the WLAs. Federal CWA section 303(d) TMDL requirements, as implemented under the CWC, require a monitoring plan designed to measure

the effectiveness of the TMDL point and nonpoint source control measures and the progress the waterbody is making toward attaining water quality objectives. Such a plan necessarily includes collection of water quality data. Provision C.16.5.g. is intended to assess inputs of methylmercury to the Delta from Marsh Creek and urban runoff; provide information to support implementation of pollutant control strategies; and assess progress toward achieving WLAs for the TMDL; and help resolve uncertainties in loading estimates and impairments associated with methylmercury.

In particular, methylmercury monitoring addresses four management questions:

1. Watershed Loads – What is the annual average methylmercury load from the Marsh Creek watershed?
2. Urban Discharge Loads – How much of the Marsh Creek methylmercury load results from discharges from the MS4 system?
3. Management Action Effectiveness – What is the methylmercury load reduction from the MS4 system by implementation of reasonable, foreseeable control measures to the maximum extent practicable?
4. Do eutrophication and low dissolved oxygen increase methylmercury in ponded areas of Marsh Creek during low flow periods (depending on the year, low flow periods can range between mid-March through mid-November), and if so:
 - o Under what circumstances do those effects reach the Delta?
 - o Are there reasonable and foreseeable management actions to ameliorate that condition?

CWA section 402, subdivision (a)(2); 40 CFR sections 122.44, subdivision (i)(1), and 122.48, subdivision (b); and CWC section 13383 provide authority for the Water Board to require monitoring and technical water quality reports. Provision C.16.5.g. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements and (2) provide information useful in evaluating compliance with all Permit requirements.

To inform the permit reissuance, the East County Permittees' Report of Waste Discharge will include the status of their implementation of the Delta Mercury Control Program.

Provision C.16.5.h. (Delta Mercury Control Program) implements the Delta Methylmercury TMDL. On April 22, 2010, the Central Valley Regional Water Board adopted a Basin Plan amendment to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* for the Control of Methylmercury and Mercury in the Sacramento-San Joaquin Delta Estuary (Resolution No. R5-2010-0043) to address the mercury impairments. The Delta Methylmercury TMDL was approved by the State Water Resources Control Board and the California Office of Administrative Law. Final approval by the U.S. EPA was received on October 20, 2011.

The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the CWA 303(d) list for mercury and the State Water Resources Control Board has designated the Delta as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program. Mercury problems are evident throughout the Central Valley Watershed. The main concern with

inorganic mercury is that it can develop into methylmercury, a powerful neurotoxin that bioaccumulates in the aquatic food chain to harmful levels. Health advisories have been issued which recommend limiting consumption of fish from the Bay/Delta, tributaries to the Delta, and many lakes and reservoirs in the Central Valley. Concentrations of mercury in fish in other water bodies approach or exceed National Academy of Science (NAS), U.S. EPA, and/or U.S. Food and Drug Administration (FDA) guidelines for wildlife and human protection. Mercury levels also exceed water quality objectives for the Delta and elsewhere. In addition to these concerns, fish-eating birds taken from some bodies of water in the Basins have levels of mercury that can be expected to cause toxic effects. Bird-kills from mercury also have been documented in Lake Berryessa.

Components of the Delta Methylmercury TMDL relevant to implementation through the municipal storm water permits are as follows:

1. The methylmercury waste load allocations for the East County Permittees, by Delta subarea, are:

Central Delta 0.75 grams/year;

Marsh Creek 0.30 grams/year; and

West Delta 3.2 grams/year

Compliance with the methylmercury waste load allocations shall be met as soon as possible, but no later than 2030, unless the Central Valley Regional Water Board modifies the TMDL implementation schedule and Final Compliance Date.

2. The NPDES Permits for urban runoff management agencies shall require pollution prevention measures and the implementation of BMPs to minimize total mercury discharges. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to human health and wildlife. Requirements in the Permit issued or reissued and applicable for the term of the Permit shall be based on an updated assessment of pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges to the MEP.
3. Annual methylmercury loads in urban runoff in MS4 service area within the Delta and Yolo Bypass may be calculated by the following method or by an alternate method approved the Central Valley Regional Water Board Executive Officer. The annual methylmercury load in urban runoff for a given MS4 service area during a given year may be calculated by the sum of wet weather and dry weather methylmercury loads. To estimate wet weather methylmercury loads discharged by MS4 urban areas, the average of wet weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the wet weather runoff volume estimated for all urban areas within the MS4 service area within the Delta and Yolo Bypass. To estimate dry weather methylmercury loads, the average dry weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the estimated dry weather urban runoff volume in the MS4 service area within the Delta and Yolo Bypass. This method is consistent with that used to develop load estimates in the Delta Methylmercury TMDL.

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4. Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury or methylmercury loads to the Delta or is outside the jurisdiction authority of any agency, the Central Valley Regional Water Board may consider issuing additional allocations and regulatory requirements for the source in question.

In their Previous Permit, the East County Permittees were required to implement Phase 1 of the Delta Methylmercury TMDL. Phase 1 required them to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs to control methylmercury; and to develop and evaluate additional BMPs effectiveness to control methylmercury. A report documenting the results of their control studies was submitted to the Central Valley Water Board October 2018. This marked the end of Phase 1.

The Central Valley Regional Water Board will use the control studies to conduct a Phase 1 Delta Methylmercury TMDL Review that considers:

- Modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date;
- Implementation of management practices and schedules for methylmercury controls; and
- Adoption of a mercury offset program for dischargers who cannot meet their load and waste load allocations after implementing all reasonable load reduction strategies.

The findings of the control studies and other information will also be used to re-evaluate the fish tissue objectives, the linkage analysis between objectives and sources, and the attainability of the allocations. The linkage analysis, fish tissue objectives, allocations, and time schedules may also be adjusted. In addition, the Central Valley Regional Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Methylmercury TMDL during the Phase 1 Delta Methylmercury TMDL Review.

Phase 2 of the Delta Methylmercury TMDL begins after the Phase 1 Delta Methylmercury TMDL Review. If Phase 2 begins during this Permit term, this Permit may be amended to include additional requirements.

Provision C.16.5.h contains minimum BMPs to reduce inorganic mercury loads and make substantial progress toward achieving the urban runoff methylmercury load allocations established for the Delta Methylmercury TMDL. Preventing sediment-bound inorganic mercury from entering wet environments is critical in preventing it from methylating. The BMPs may, or may not, on their own be adequate for achieving compliance with the WLAs. If the East County Permittees are not making progress to achieve the WLAs by the compliance date, they will implement additional BMPs (structural or non-structural).

Mercury Collection and Recycling

Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs, thermometers) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and this Provision requires continued implementation of collection and

recycling of mercury-containing devices and waste products and alternative procedures to improve proper handling, disposal, and recycling of mercury-containing products.

Enhanced Municipal Management Practices to Reduce Sediment Discharges

Unless appropriate BMPs are implemented, municipal operations and maintenance activities are potential sources of sediment discharges. Sediment accumulated on sidewalks, corporation yards, roads, parking lots, and landscaping, is a major source of point source pollutants found in urban runoff. The enhanced municipal management practices to reduce sediment discharges are intended to minimize total (inorganic) mercury discharges required by the Delta Methylmercury TMDL. Thus, Provision C.16.5.h requires the East County permittees to implement minimum BMPs for municipal facilities and activities as part of their ongoing pollution prevention efforts. Such prevention measures include, but are not limited to, storm drain drop inlet and pipeline cleaning, landscaping, road construction, road repair, and pump station cleaning. The work of municipal maintenance personnel is vital to minimize stormwater pollution because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain.

Public Education and Risk Reduction

An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues and its importance and influences positive stormwater pollution prevention behavior.

The East County Permittees have been implementing public outreach campaigns to educate their community on mercury pollution prevention. This Permit requires the East County Permittees to continue implementing a public education, outreach and participation program that is designed to reach residential, commercial, and industrial sources of mercury-containing products or emissions. The East County Permittees can utilize various electronic and print media and paid and free media to best reach the different various target audiences. Additionally, the East County Permittees should continue communicating with a broad spectrum of citizens with stormwater pollution prevention information through long-established outreach mechanisms such as staffing tables or booths at fairs, street fairs, and other community events. An informed community ensures greater compliance with the stormwater program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of local waters.

Methylmercury is a toxicant that is harmful to the brain and nervous system of infants, children, and the developing fetus. Nearly all fish caught in the Delta contain traces of methylmercury, the methylated form of mercury. However, larger fish that have lived longer have the highest levels of methylmercury because they have had more time to accumulate it. These large fish pose the greatest risk to children and pregnant women who eat them regularly. This Provision requires continual actions to manage human health risk due to mercury in Delta fish. This includes efforts to communicate the health risks of eating Delta fish to high risk-communities.

Attachment G: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment J:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in federal NPDES regulation 40 CFR 122.41.

Attachment G includes Standard Provisions. These Standard Provisions ensure that NPDES stormwater permits are consistent and compatible with USEPA's federal regulations. Some Standard Provision sections specific to publicly owned sewage treatment works are not included in Attachment G.

Fact Sheet Attachment C10

**303(d) Trash Resolution and Staff Report
February 2009**

Available at

http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0008.pdf

ATTACHMENT B

Provision C.3.b. Sample Reporting Table

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
Private Projects													
Nirvana Estates; Project #05-122; Property bounded by Paradise Lane, Serenity Drive, and Eternity Circle; Eden, CA	Heavenly Homes; Phase 1; Construction of 156 single-family homes and 45 townhomes with commercial shops and underground parking.	Runoff from site drains to Babbling Brook	25 acres site area, 21 acres disturbed	20 acres new	20 acres post-project	Application submitted 12/29/14, Application deemed complete 1/30/15, Project approved 7/16/15	Stenciled inlets, street sweeping, covered parking, car wash pad drains to sanitary sewer	Pervious pavement for all driveways, sidewalks, and commercial plaza	vegetated swales, detention basins,	Conditions of Approval require Homeowners Association to perform regular maintenance. Written record will be made available to City inspectors.	WEF Method	n/a	Contra Costa sizing charts used to design detention basin at Peace Park. Also contributed to in-stream projects in Babbling Brook
Barter Heaven; Project #05-345; Shoppers Lane & Bargain Avenue; 14578 Shoppers Lane, Eden, CA	Deals Galore Development Co.; Demolition of strip mall and parking lot and construction of 500-unit 5-story shopping mall with underground parking and limited outdoor parking.	Runoff from site drains to Bargain River	5 acres site area, 3 acres disturbed	1 acre new, 2 acres replaced	3.5 acres pre-project, 4.5 acres post-project	Application submitted 7/9/15, Application deemed complete 8/2/15, Project approved 12/12/15	Stenciled inlets, trash enclosures, underground parking, street sweeping	One-way aisles to minimize outdoor parking footprint; roof drains to planter boxes	tree wells with bioretention; planter boxes with bioretention	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	\$ 250,000 paid to Renew Regional Project sponsored by Riverworks Foundation, 243 Water Way, Eden, CA 408-345-6789	Renew Project includes treatment and HM Controls

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
New Beginnings; Project No. #05-456; Hope Street & Chance Road; 567 Hope Boulevard, Eden, CA	Fresh Start Corporation; Demolition of abandoned warehouse and construction of a 5-story building with 250 low-income rental housing units.	Runoff from site drains to Poor Man Creek	5 acres site area, 100,000 ft ² disturbed	1 acre replaced	2 acres pre-project, 1 acre post-project	Application submitted 2/9/16, Application deemed complete 4/10/16; Project approved 6/30/16	Trash enclosures, underground parking, street sweeping, car wash pad drains to sanitary sewer	roof drains to landscaping	parking runoff flows to six bioretention units/gardens	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	n/a	n/a
Public Projects													
Gridlock Relief, Project No. #05-99, ABC Blvd between Main and Huett Streets, Eden, CA	City of Eden. Widening of ABC Blvd from 4 to 6 lanes	Runoff from site drains to Congestion River	6 acres site area, 3 acres disturbed	2 acres new, 1 acre replaced	4 acres pre-project, 6 acres post-project	Application submitted 7/9/15, Application deemed complete 10/6/15, Project approved 12/9/15, Construction scheduled to begin 7/10/16	none	ABC Blvd sloped to drain runoff into landscaped areas in median	Runoff leaving underdrain system of landscaped median is pumped to bioretention gardens along either side of ABC Blvd	Signed statement from City of Eden assuming post-construction responsibility for treatment BMP maintenance.	WEF Method	n/a	BAHM used to design and size stormwater treatment units so that increased runoff is detained.

Sample Reporting Table C.3.b. Footnotes

1. If a project is being constructed in Phases, use a separate row entry for each Phase.
2. State the watershed(s) that the Regulated Project drains to. Optional but recommended: Also state the downstream watershed(s).
3. State both the total new impervious surface area and the total replaced impervious surface area, as applicable.
4. For redevelopment projects state both the pre-project impervious surface area and the post-project impervious surface area.
5. State project application date; application deemed complete date; and final, major, staff-level discretionary review and approval date.
6. List stormwater treatment system(s) installed onsite or at a joint stormwater treatment system facility.
7. For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.iv.(2)(m)(i) for the offsite project.
8. For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.iv.(2)(m)(ii) for the Regional Project.
9. If HM control is not required, state why not.
10. If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

Instructions for Provision C.3.b. Sample Reporting Table

1. **Project Name, Number, Location, and Street Address** – Include the following information:
 - Name of the project
 - Number of the project (if applicable)
 - Location of the project with cross streets
 - Street address of the project (if available)

2. **Name of Developer, Project Phase Number, Project Type, and Project Description** – Include the following information:
 - Name of the developer
 - Project phase name and/or number (only if the project is being developed in phases) – each phase should have a separate row entry
 - Type of development (i.e., new and/or redevelopment)
 - Description of development (e.g., 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse)

3. **Project Watershed**
 - State the watershed(s) that the Project drains into
 - Optional but recommended: Also state the downstream watershed(s)

4. **Total Site Area and Total Area of Land Disturbed** – State the total site area and the total area of land disturbed.

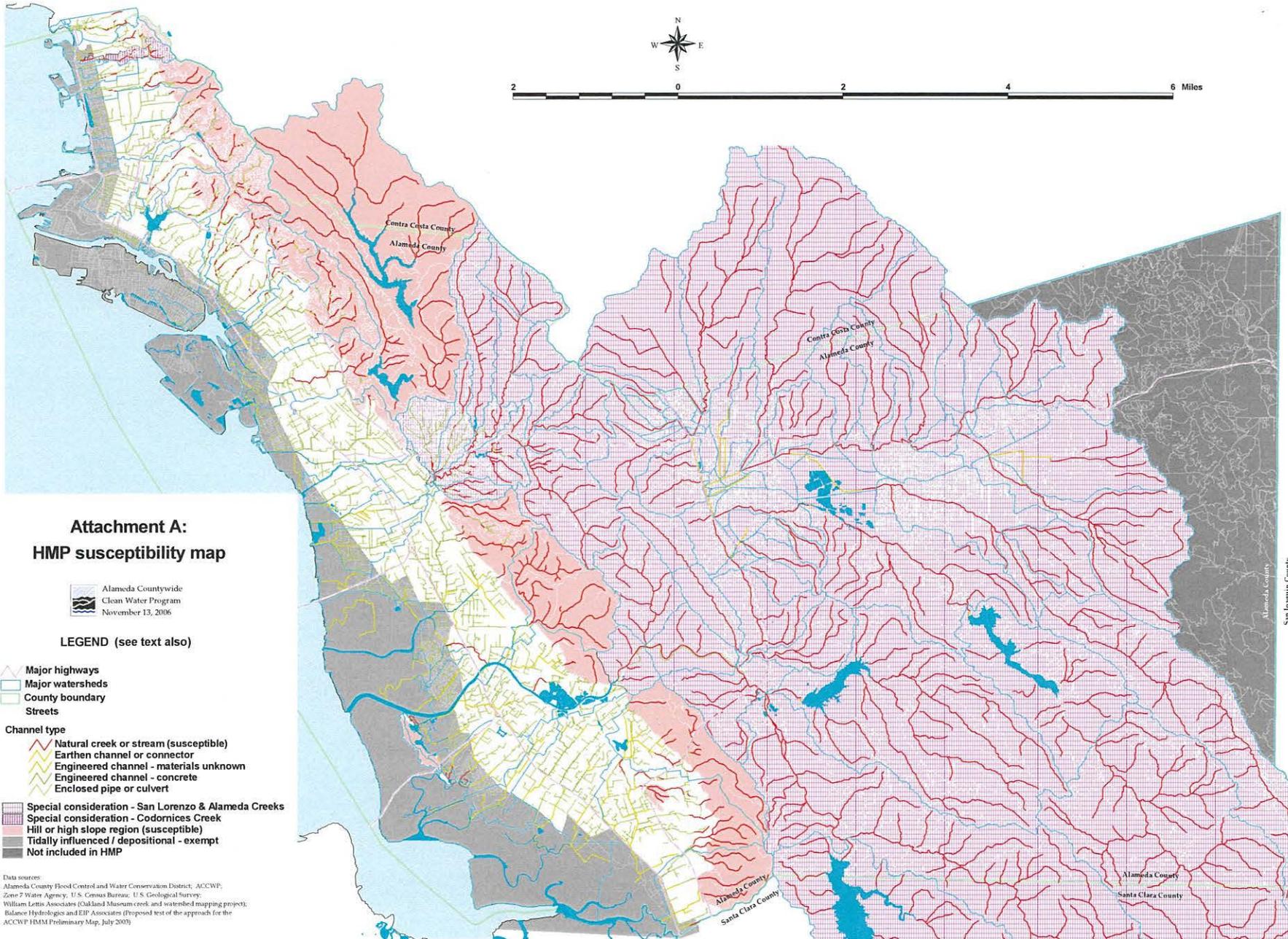
5. **Total New and/or Replaced Impervious Surface Area**
 - State the total new impervious surface area
 - State the total replaced impervious surface area, as applicable

6. **Total Pre- and Post-Project Impervious Surface Area** – For redevelopment projects, state both the pre-project impervious surface area and the post-project impervious surface area.

7. **Status of Project** – Include the following information:
 - Project application submittal date
 - Project application deemed complete date
 - Final, major, staff-level discretionary review and approval date

8. **Source Control Measures** – List all source control measures that have been or will be included in the project.

-
9. **Site Design Measures** – List all site design measures that have been or will be included in the project.
 10. **Treatment Systems Installed** – List all post-construction stormwater treatment system(s) installed onsite and/or at a joint stormwater treatment system facility.
 11. **Operation and Maintenance Responsibility Mechanism** – List the legal mechanism(s) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
 12. **Hydraulic Sizing Criteria Used** – List the hydraulic sizing criteria used for the Project.
 13. **Alternative Compliance Measures**
 - **Option 1: LID Treatment at an Offsite Location (Provision C.3.e.i.(1))** – On a separate page, give a discussion of the alternative compliance project including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
 - **Option 2: Payment of In-Lieu Fees (Provision C.3.e.i.(2))** – On a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii).
 14. **HM Controls**
 - If HM control is not required, state why not
 - If HM control is required, state control method used (e.g., method to design and size device(s), method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basins, or in-stream control)



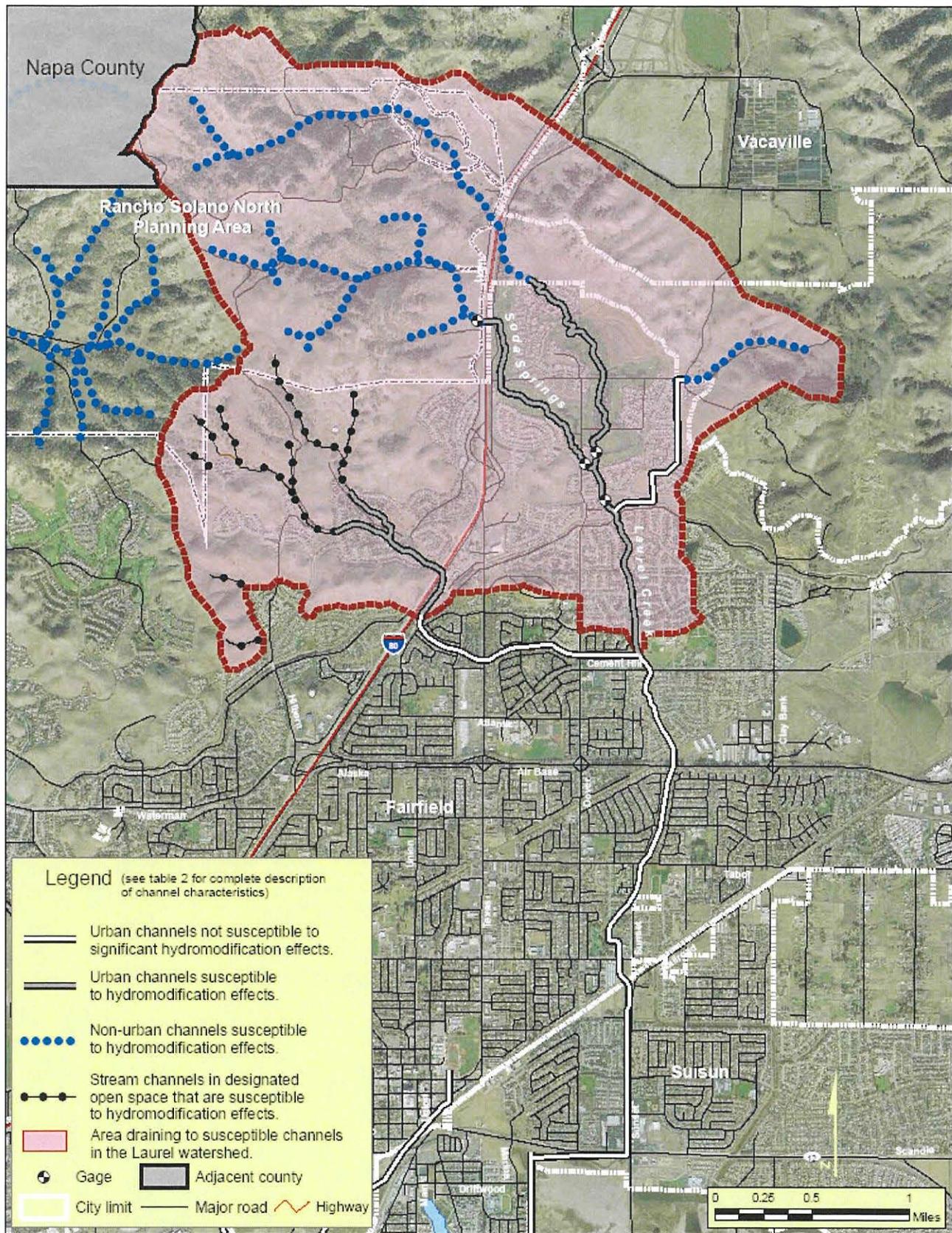
**Attachment A:
HMP susceptibility map**

Alameda Countywide
Clean Water Program
November 13, 2006

LEGEND (see text also)

- Major highways
- Major watersheds
- County boundary
- Streets
- Channel type
 - Natural creek or stream (susceptible)
 - Earthen channel or connector
 - Engineered channel - materials unknown
 - Engineered channel - concrete
 - Enclosed pipe or culvert
- Special consideration - San Lorenzo & Alameda Creeks
- Special consideration - Codornices Creek
- Hill or high slope region (susceptible)
- Tidally influenced / depositional - exempt
- Not included in HMP

Data sources:
Alameda County Flood Control and Water Conservation District, ACCWP;
Zone 7 Water Agency; U.S. Census Bureau; U.S. Geological Survey;
William Lettis Associates (Oakland Museum creek and watershed mapping project);
Balance Hydrologics and EIP Associates (Proposed test of the approach for the
ACCWP HMM Preliminary Map, July 2005)

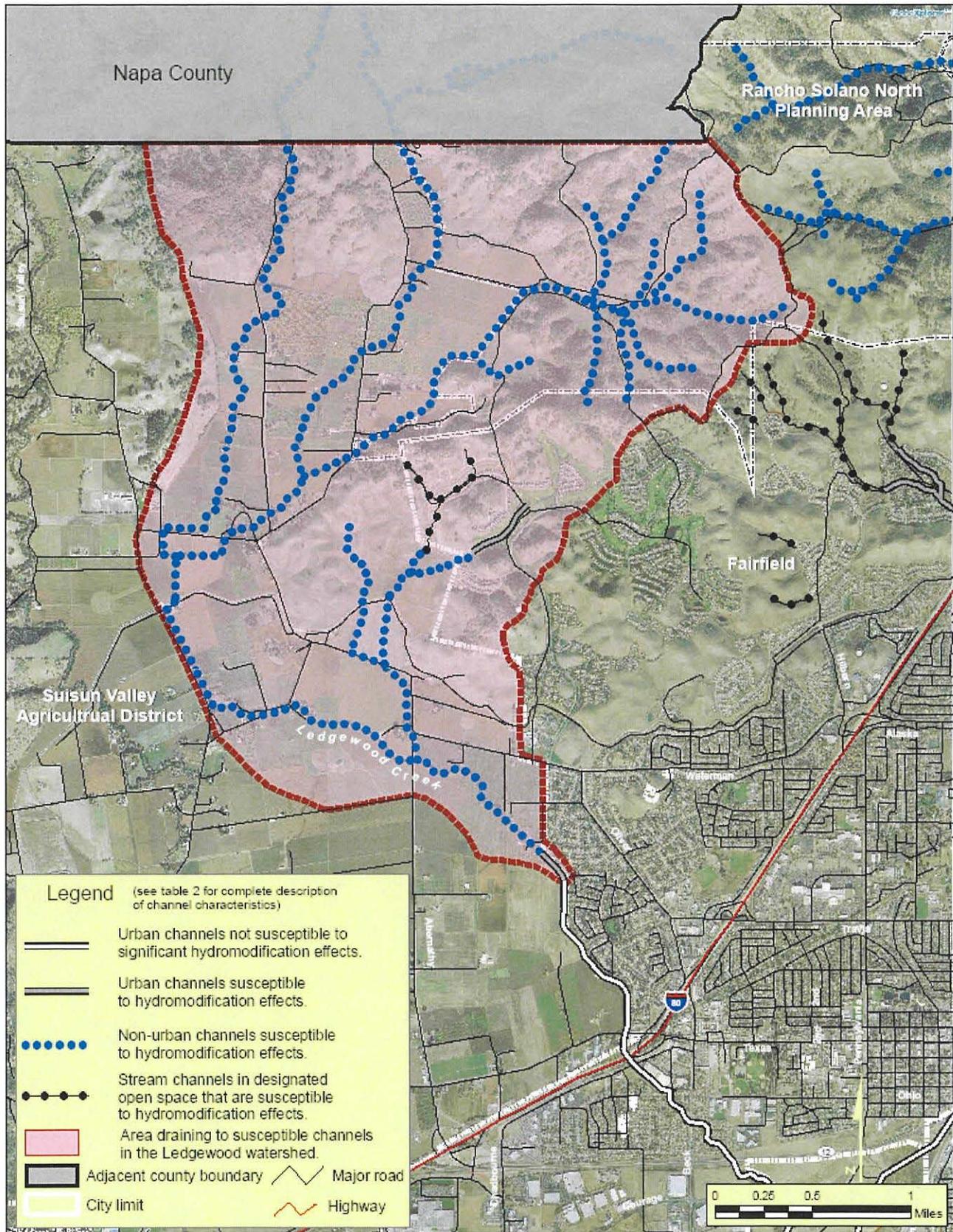


Source: Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas (north of Cement Hill Road, for example).



Balance Hydrologics, Inc.

Figure 2. Map showing HMP channel Classification for the Laurel Creek watershed. The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map). Hydromodification controls are not required for projects that drain directly to non-susceptible urban channels.



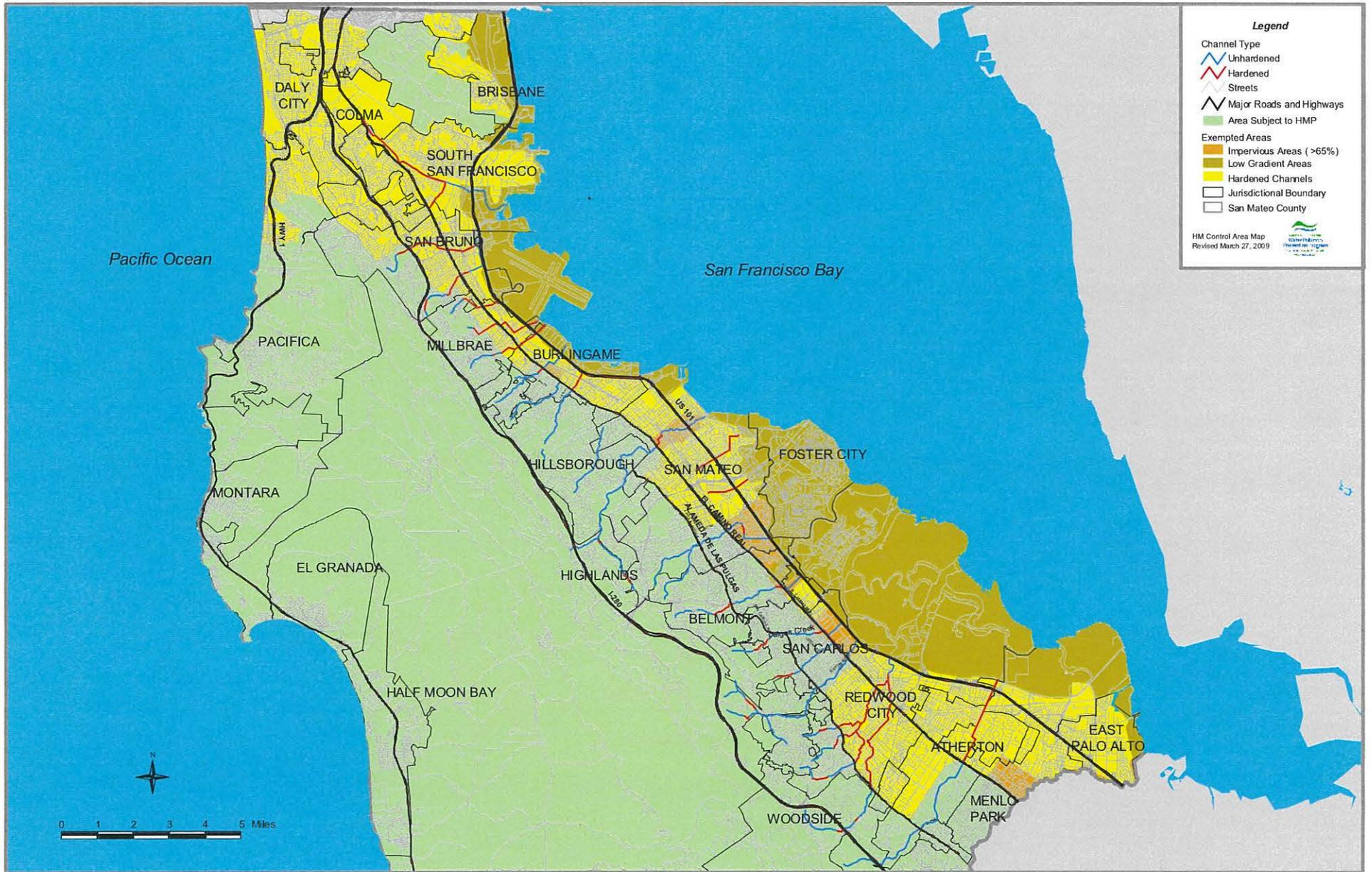
Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas, as shown in the aerial photo.

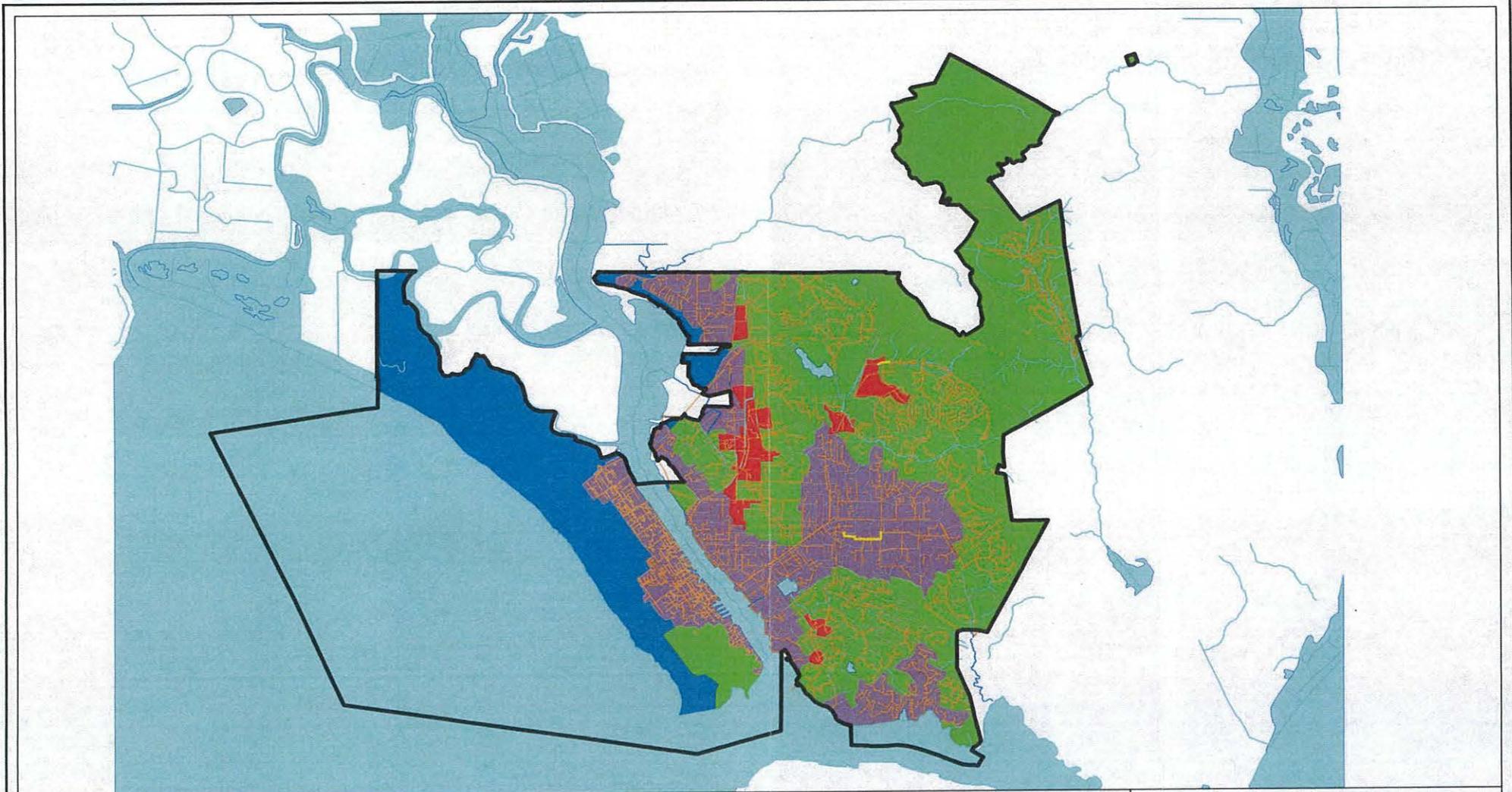


Balance Hydrologics, Inc.

Figure 3. Map showing HMP channel Classification for the Ledgewood Creek watershed.

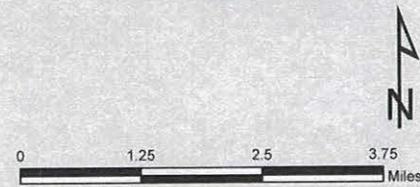
The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map), however areas outside the City of Fairfield are not included in this permit unless annexed by the city. The non-developed areas within the current city limits are designated open space in relatively steep terrain, and are unlikely to be converted to urban areas however the HMP still applies in these areas.





Legend

- HMP Boundary
- Fully Hardened Channels
- Non-Hardened Channels (Non-Tidal)
- Non-Hardened Channels (Tidal)
- Storm Drain System
- Open Water
- Areas Draining to Continuously Hardened Conveyances to the Bay
- HMP Applicable Areas
- Subcatchments with greater than or equal to 65% Impervious
- Baylands



HMP Applicability Map
Vallejo HMP

Geosyntec
consultants

WW1538 April 2013

Figure
3-1
S7-1307

ATTACHMENT D

Provision C.8. Standard Monitoring Provisions

All monitoring activities shall meet the following requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]
2. Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, and copies of all reports required by this Order for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Water Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and,
 - f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
5. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the monitoring Provisions. [40 CFR 122.41(l)(4)(iii)]
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Permittees shall instruct their laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittee must submit documentation from the laboratory to the Water Board for approval prior to raising the ML for any priority toxic pollutant.

-
8. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]
 9. If a Permittee monitors any pollutant more frequently than required by the Permit, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the reports requested by the Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT E

Supporting Information for Provision C.10.

**Permittee 2009 Mapped Acreages of Trash
Generation Rates**

Minimum Full Trash Capture Area

**Minimum Trash Hot Spots to be Annually
Cleaned**

And

Example Trash Generation Rate Map

Table 1. Trash Generation Areas Mapped as of June 2015

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	Moderate	High	Very High	Total
Alameda	Alameda	3,729	1,496	263	10	5,498
Alameda	Alameda County	229,012	2,434	347	-	231,793
Alameda	Albany	555	305	119	12	991
Alameda	Berkeley	2,792	2,317	763	216	6,088
Alameda	Dublin	6,498	859	289	-	7,645
Alameda	Emeryville	68	351	171	125	715
Alameda	Fremont	30,166	6,465	740	-	37,372
Alameda	Hayward	10,745	7,008	1,395	165	19,312
Alameda	Livermore	11,355	3,325	534	-	15,214
Alameda	Newark	2,918	1,816	631	25	5,391
Alameda	Oakland	14,432	5,663	4,860	3,465	28,420
Alameda	Piedmont	977	109	1	-	1,086
Alameda	Pleasanton	13,172	1,416	176	-	14,765
Alameda	San Leandro	2,818	4,044	790	77	7,729
Alameda	Union City	10,234	1,660	228	-	12,122
Contra Costa	Concord	10,832	2,415	678	72	13,997
Contra Costa	Contra Costa County	174,854	3,707	1,717	118	180,396
Contra Costa	Danville	11,282	106	3	-	11,391
Contra Costa	El Cerrito	1,817	311	169	4	2,301
Contra Costa	Hercules	3,753	188	12	-	3,952
Contra Costa	Lafayette	9,252	245	1	-	9,498
Contra Costa	Martinez	5,004	1,777	93	1	6,875
Contra Costa	Moraga	5,711	92	125	-	5,929
Contra Costa	Orinda	7,764	232	50	-	8,046
Contra Costa	Pinole	2,827	136	171	-	3,134
Contra Costa	Pittsburg	5,824	2,892	210	132	9,058

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	Moderate	High	Very High	Total
Contra Costa	Pleasant Hill	2,873	1,080	371	22	4,346
Contra Costa	Richmond	10,704	4,538	1,774	269	17,285
Contra Costa	San Pablo	325	682	481	72	1,560
Contra Costa	San Ramon	10,536	1,184	-	-	11,720
Contra Costa	Walnut Creek	11,329	963	115	-	12,407
San Mateo	Atherton	2,984	230	-	-	3,214
San Mateo	Belmont	2,517	240	62	-	2,820
San Mateo	Brisbane	1,220	473	60	21	1,775
San Mateo	Burlingame	1,964	592	99	-	2,654
San Mateo	Colma	1,026	122	74	4	1,225
San Mateo	Daly City	2,553	1,015	407	-	3,975
San Mateo	East Palo Alto	97	879	356	97	1,428
San Mateo	Foster City	2,187	109	-	-	2,296
San Mateo	Half Moon Bay	3,657	187	51	-	3,895
San Mateo	Hillsborough	3,944	7	-	-	3,950
San Mateo	Menlo Park	4,811	292	3	-	5,106
San Mateo	Millbrae	1,512	369	79	-	1,959
San Mateo	Pacifica	7,321	472	104	-	7,898
San Mateo	Portola Valley	5,786	5	-	-	5,790
San Mateo	Redwood City	7,128	398	1,576	398	9,502
San Mateo	San Bruno	2,065	965	57	-	3,088
San Mateo	San Carlos	2,584	604	78	-	3,265
San Mateo	San Mateo	4,340	2,343	302	-	6,985
San Mateo	San Mateo County	172,050	272	362	-	172,683
San Mateo	South San Francisco	2,724	2,321	337	-	5,382
San Mateo	Woodside	6,989	2	-	-	6,991
Santa Clara	Campbell	2,335	1,133	273	-	3,741
Santa Clara	Cupertino	5,446	1,161	274	-	6,881
Santa Clara	Los Altos	3,966	10	14	-	3,990
Santa Clara	Los Altos Hills	5,377	6	-	-	5,383
Santa Clara	Los Gatos	6,275	698	-	-	6,973
Santa Clara	Milpitas	5,065	3,002	98	2	8,167

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	Moderate	High	Very High	Total
Santa Clara	Monte Sereno	1,018	9	-	-	1,027
Santa Clara	Mountain View	3,882	2,626	460	-	6,968
Santa Clara	Palo Alto	12,592	1,539	53	-	14,184
Santa Clara	San Jose	73,366	21,823	5,709	549	101,447
Santa Clara	Santa Clara	5,217	4,855	841	12	10,925
Santa Clara	Santa Clara County	380,316	678	1,123	-	382,117
Santa Clara	Saratoga	7,207	409	-	-	7,616
Santa Clara	Sunnyvale	7,082	4,075	907	11	12,075
Solano	Fairfield	18,578	240	57	-	18,875
Solano	Suisun City	2,043	12	9	-	2,064
Solano	Vallejo	10,980	4,314	1,948	476	17,718
	Total	1,404,362	118,302	33,046	6,355	1,562,066

**Table 2. Minimum Trash Capture Area and Trash Hot Spots for
Population Based Permittees**

Data Source: <http://quake.abag.ca.gov/mitigation/pickdbh2.html> and Association of Bay Area Governments, 2005
ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

	Population	Retail / Wholesale Commercial Acres	Minimum Full Trash Capture Catchment Area (Acres)¹	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots²
Alameda County						
San Leandro	73,402	721	216	2	7	4
Oakland	420,183	759	228	14	8	8
Dublin	46,934	377	113	1	3	3
Emeryville	9,727	69	21	1	1	1
Albany	16,877	95	28	1	1	1
Berkeley	106,697	183	55	3	1	3
Alameda County Unincorporated.	140,825	375	112	4	3	4
Alameda	75,823	402	121	2	4	4
Fremont	213,512	698	209	7	6	7
Hayward	149,205	726	218	4	7	7
Livermore	83,604	423	127	2	4	4
Newark	43,872	314	94	1	3	3
Piedmont	11,100	1	0	1	1	1
Pleasanton	69,388	366	110	2	3	3
Union City	73,402	183	55	2	1	2

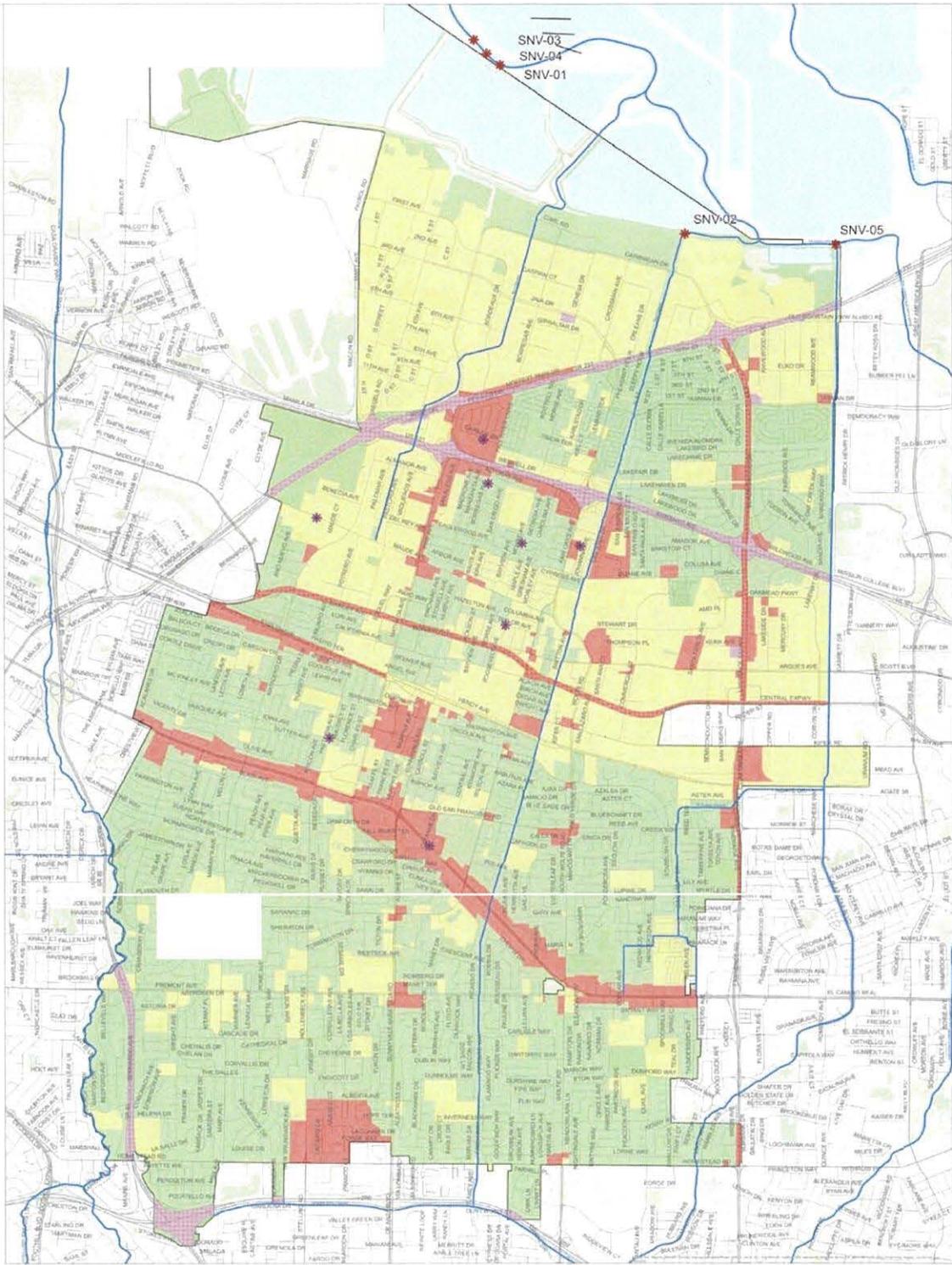
¹ 30% of Retail / Wholesale Commercial Acres – If population under 12,000 and Retail/Wholesale Commercial < 40 acres, Permittee is exempt from Minimum Full Trash Capture Requirement – C.10.iii.a.

² If the hot spot # based on % commercial area is more than twice that based on population, the minimum hot spot # is double the population based #.

	Population	Retail / Wholesale Commercial Acres	Minimum Full Trash Capture Catchment Area (Acres) ¹	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ²
San Mateo County						
San Mateo County Unincorporated.	65,844	71	21	2	1	2
Atherton	7,475	0	0	1	1	1
Belmont	26,078	58	17	1	1	1
Brisbane	3,861	16	0	1	1	1
Burlingame	28,867	123	37	1	1	1
Colma	1,613	106	0	1	1	1
Portola Valley	4,639	9	0	1	1	1
Daly City	106,361	242	73	3	2	3
East Palo Alto	32,897	59	18	1	1	1
Foster City	30,308	67	20	1	1	1
Half Moon Bay	13,046	49	15	1	1	1
Hillsborough	11,272	0	0	1	1	1
Menlo Park	31,490	83	25	1	1	1
Millbrae	21,387	68	20	1	1	1
Pacifica	39,616	100	30	1	1	1
Redwood City	77,269	309	93	2	3	3
San Bruno	43,444	137	41	1	1	1
San Carlos	28,857	129	39	1	1	1
San Mateo	95,776	275	82	3	2	3
South San Francisco	63,744	195	58	2	1	2
Woodside	5,625	9	0	1	1	1

	Population	Retail / Wholesale Commercial Acres	Minimum Full Trash Capture Catchment Area (Acres) ¹	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ²
Contra Costa County						
Contra Costa County Unincorporated.	152,744	524	157	5	5	5
Concord	123,776	1016	305	4	10	8
Walnut Creek	65,306	329	99	2	3	3
Clayton	10,784	21	(0)	1	1	1
Danville	42,629	134	40	1	1	1
El Cerrito	23,320	105	32	1	1	1
Hercules	24,324	37	11	1	1	1
Lafayette	23,962	68	20	1	1	1
Martinez	36,144	142	43	1	1	1
Moraga	16,138	108	32	1	1	1
Orinda	17,542	24	7	1	1	1
Pinole	19,193	140	42	1	1	1
Pittsburg	63,652	520	156	2	5	4
Pleasant Hill	33,377	219	66	1	2	2
Richmond	103,577	391	117	3	3	3
San Pablo	31,190	131	39	1	1	1
San Ramon	59,002	274	82	1	2	2
Santa Clara County						
Santa Clara County Unincorporated	99,122	270	47	3	3	3
Campbell	38,889	137	41	1	1	1
Cupertino	55,551	213	64	2	2	2
Los Altos	28,291	65	20	1	1	1

	Population	Retail / Wholesale Commercial Acres	Minimum Full Trash Capture Catchment Area (Acres) ¹	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ²
Los Altos Hills	8,837	0	0	1	1	1
Los Gatos	30,296	163	49	1	1	1
Milpitas	69,419	457	137	2	4	4
Monte Sereno	3,579	0	0	1	1	1
Mountain View	73,932	375	112	2	3	3
Santa Clara	115,503	560	168	3	5	5
Saratoga	31,592	41	12	1	1	1
San Jose	989,496	2983	895	32	29	32
Sunnyvale	137,538	548	164	3	5	5
Palo Alto	63,367	282	84	2	2	2
Solano County						
Vallejo	120,416	559	168	4	5	5
Fairfield	106,142	486	146	3	4	4
Suisun	28,031	75	22	1	1	1
Totals	4,930,339	19057	5718	165	184	349



ATTACHMENT F

**State Water Resources Control Board
Resolution No. 2012-0031, Attachment B
Special Protections for Areas of Biological Significance**

**STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2012-0031**

Attachment B - Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges

I. PROVISIONS FOR POINT SOURCE DISCHARGES OF STORM WATER AND NONPOINT SOURCE WASTE DISCHARGES

The following terms, prohibitions, and special conditions (hereafter collectively referred to as special conditions) are established as limitations on point source storm water and nonpoint source discharges. These special conditions provide Special Protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS), as required for State Water Quality Protection Areas pursuant to California Public Resources Code Sections 36700(f) and 36710(f). These Special Protections are adopted by the State Water Board as part of the California Ocean Plan (Ocean Plan) General Exception.

The special conditions are organized by category of discharge. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) will determine categories and the means of regulation for those categories [e.g., Point Source Storm Water National Pollutant Discharge Elimination System (NPDES) or Nonpoint Source].

A. PERMITTED POINT SOURCE DISCHARGES OF STORM WATER

1. General Provisions for Permitted Point Source Discharges of Storm Water

- a. Existing storm water discharges into an ASBS are allowed only under the following conditions:
 - (1) The discharges are authorized by an NPDES permit issued by the State Water Board or Regional Water Board;
 - (2) The discharges comply with all of the applicable terms, prohibitions, and special conditions contained in these Special Protections; and
 - (3) The discharges:
 - (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (ii) Are designed to prevent soil erosion;
 - (iii) Occur only during wet weather;
 - (iv) Are composed of only storm water runoff.

-
- b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.
 - c. The discharge of trash is prohibited.
 - d. Only discharges from existing storm water outfalls are allowed. Any proposed or new storm water runoff discharge shall be routed to existing storm water discharge outfalls and shall not result in any new contribution of waste to an ASBS (i.e., no additional pollutant loading). "Existing storm water outfalls" are those that were constructed or under construction prior to January 1, 2005. "New contribution of waste" is defined as any addition of waste beyond what would have occurred as of January 1, 2005. A change to an existing storm water outfall, in terms of re-location or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
 - e. Non-storm water discharges are prohibited except as provided below:
 - (1) The term "non-storm water discharges" means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not composed entirely of storm water.
 - (2) (i) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:
 - (a) Discharges associated with emergency fire fighting operations.
 - (b) Foundation and footing drains.
 - (c) Water from crawl space or basement pumps.
 - (d) Hillside dewatering.
 - (e) Naturally occurring groundwater seepage via a storm drain.
 - (f) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
 - (ii) An NPDES permitting authority may authorize non-storm water discharges to an MS4 with a direct discharge to an ASBS only to the extent the NPDES permitting authority finds that the discharge does not alter natural ocean water quality in the ASBS.
 - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.

2. Compliance Plans for Inclusion in Storm Water Management Plans (SWMP) and Storm Water Pollution Prevention Plans (SWPPP).

The discharger shall specifically address the prohibition of non-storm water runoff and the requirement to maintain natural water quality for storm water discharges to an ASBS in an ASBS Compliance Plan to be included in its SWMP or a SWPPP, as appropriate to permit type. If a statewide permit includes a SWMP, then the discharger shall prepare a stand-alone compliance

plan for ASBS discharges. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (for permits issued by Regional Water Boards).

- a. The Compliance Plan shall include a map of surface drainage of storm water runoff, showing areas of sheet runoff, prioritize discharges, and describe any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future. Priority discharges are those that pose the greatest water quality threat and which are identified to require installation of structural BMPs. The map shall also show the storm water conveyances in relation to other features such as service areas, sewage conveyances and treatment facilities, landslides, areas prone to erosion, and waste and hazardous material storage areas, if applicable. The SWMP or SWPPP shall also include a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.
- b. The ASBS Compliance Plan shall describe the measures by which all non-authorized non-storm water runoff (e.g., dry weather flows) has been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.
- c. For Municipal Separate Storm Sewer System (MS4s), the ASBS Compliance Plan shall require minimum inspection frequencies as follows:
 - (1) The minimum inspection frequency for construction sites shall be weekly during rainy season;
 - (2) The minimum inspection frequency for industrial facilities shall be monthly during the rainy season;
 - (3) The minimum inspection frequency for commercial facilities (e.g., restaurants) shall be twice during the rainy season; and
 - (4) Storm water outfall drains equal to or greater than 18 inches (457 mm) in diameter or width shall be inspected once prior to the beginning of the rainy season and once during the rainy season and maintained to remove trash and other anthropogenic debris.
- d. The ASBS Compliance Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that such installation would pose a threat to health or safety. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:
 - (1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

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- (2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

- e. The ASBS Compliance Plan shall address erosion control and the prevention of anthropogenic sedimentation in ASBS. The natural habitat conditions in the ASBS shall not be altered as a result of anthropogenic sedimentation.
- f. The ASBS Compliance Plan shall describe the non-structural BMPs currently employed and planned in the future (including those for construction activities), and include an implementation schedule. The ASBS Compliance Plan shall include non-structural BMPs that address public education and outreach. Education and outreach efforts must adequately inform the public that direct discharges of pollutants from private property not entering an MS4 are prohibited. The ASBS Compliance Plan shall also describe the structural BMPs, including any low impact development (LID) measures, currently employed and planned for higher threat discharges and include an implementation schedule. To control storm water runoff discharges (at the end-of-pipe) during a design storm, Permittees must first consider, and use where feasible, LID practices to infiltrate, use, or evapotranspire storm water runoff on-site, if LID practices would be the most effective at reducing pollutants from entering the ASBS.
- g. The BMPs and implementation schedule shall be designed to ensure that natural water quality conditions in the receiving water are achieved and maintained by either reducing flows from impervious surfaces or reducing pollutant loading, or some combination thereof.
- h. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results.
 - (1) The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents.
 - (2) The report shall describe BMPs that are currently being implemented, BMPs that are identified in the SWMP or SWPPP for future implementation, and any additional BMPs that may be added to the SWMP or SWPPP to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.
 - (3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits), the discharger shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised SWMP or SWPPP, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the discharger shall submit a draft written ASBS Compliance Plan to the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that describes its strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls (implementation schedule) to comply with these special conditions for inclusion in the discharger's SWMP or SWPPP, as appropriate to permit type. The final ASBS Compliance Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these special conditions shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.
- f. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe

the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. for municipalities, a demonstration of significant hardship to discharger ratepayers, by showing the relationship of storm water fees to annual household income for residents within the discharger's jurisdictional area, and the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for other governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

B. NONPOINT SOURCE DISCHARGES

1. General Provisions for Nonpoint Sources

- a. Existing nonpoint source waste discharges are allowed into an ASBS only under the following conditions:
 - (1) The discharges are authorized under waste discharge requirements, a conditional waiver of waste discharge requirements, or a conditional prohibition issued by the State Water Board or a Regional Water Board.
 - (2) The discharges are in compliance with the applicable terms, prohibitions, and special conditions contained in these Special Protections.
 - (3) The discharges:
 - (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
 - (ii) Are designed to prevent soil erosion;
 - (iii) Occur only during wet weather;
 - (iv) Are composed of only storm water runoff.
- b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

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- c. The discharge of trash is prohibited.
 - d. Only existing nonpoint source waste discharges are allowed. "Existing nonpoint source waste discharges" are discharges that were ongoing prior to January 1, 2005. "New nonpoint source discharges" are defined as those that commenced on or after January 1, 2005. A change to an existing nonpoint source discharge, in terms of relocation or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
 - e. Non-storm water discharges from nonpoint sources (those not subject to an NPDES Permit) are prohibited except as provided below:
 - (1) The term "non-storm water discharges" means any waste discharges that are not composed entirely of storm water.
 - (2) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability, or occur naturally:
 - (i) Discharges associated with emergency fire fighting operations.
 - (ii) Foundation and footing drains.
 - (iii) Water from crawl space or basement pumps.
 - (iv) Hillside dewatering.
 - (v) Naturally occurring groundwater seepage via a storm drain.
 - (vi) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
 - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
 - f. At the San Clemente Island ASBS, discharges incidental to military training and research, development, test, and evaluation operations are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed in the two military closure areas in the vicinity of Wilson Cove and Castle Rock. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.
 - g. At the San Nicolas Island and Begg Rock ASBS, discharges incidental to military research, development, testing, and evaluation of, and training with, guided missile and other weapons systems, fleet training exercises, small-scale amphibious warfare training, and special warfare training are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

h. All other nonpoint source discharges not specifically authorized above are prohibited.

2. Planning and Reporting

a. The nonpoint source discharger shall develop an ASBS Pollution Prevention Plan, including an implementation schedule, to address storm water runoff and any other nonpoint source discharges from its facilities. The ASBS Pollution Prevention Plan must be equivalent in contents to an ASBS Compliance Plan as described in I (A)(2) in this document. The ASBS Pollution Prevention Plan is subject to approval by the Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements).

b. The ASBS Pollution Prevention Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff that are necessary to comply with these special conditions, will be achieved through Management Measures and associated Management Practices (Management Measures/Practices). Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director or Regional Water Board Executive Officer that such installation would pose a threat to health or safety. Management Measures to control storm water runoff during a design storm shall achieve on average the following target levels:

(1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

(2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

c. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff or other nonpoint source pollution is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and the Regional Water Board within 30 days of receiving the results.

(1) The report shall identify the constituents that alter natural water quality and the sources of these constituents.

(2) The report shall describe Management Measures/Practices that are currently being implemented, Management Measures/Practices that are identified in the ASBS Pollution Prevention Plan for future implementation, and any additional Management Measures/Practices that may be added to the Pollution Prevention Plan to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the Management Measures/Practices.

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- (3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements), the discharger shall revise its ASBS Pollution Prevention Plan to incorporate any new or modified Management Measures/Practices that have been or will be implemented, the implementation schedule, and any additional monitoring required.
 - (4) As long as the discharger has complied with the procedures described above and is implementing the revised ASBS Pollution Prevention Plan, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural water quality conditions due to the same constituent.
 - (5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the dischargers shall submit a draft written ASBS Pollution Prevention Plan to the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) that describes its strategy to comply with these special conditions, including the requirement to maintain natural ocean water quality in the affected ASBS. The Pollution Prevention Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls to comply with these special conditions for inclusion in the discharger's Pollution Prevention Plan. The final ASBS Pollution Prevention Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these Special Protections shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Pollution Prevention Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.

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- f. The Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

II. ADDITIONAL REQUIREMENTS FOR PARKS AND RECREATION FACILITIES

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with parks and recreation facilities shall comply with the following:

- A. The discharger shall include a section in an ASBS Compliance Plan (for NPDES dischargers) or an ASBS Pollution Prevention Plan (for nonpoint source dischargers) to address storm water runoff from parks and recreation facilities.
1. The plan shall identify all pollutant sources, including sediment sources, which may result in waste entering storm water runoff. Pollutant sources include, but are not limited to, roadside rest areas and vistas, picnic areas, campgrounds, trash receptacles, maintenance facilities, park personnel housing, portable toilets, leach fields, fuel tanks, roads, piers, and boat launch facilities.
 2. The plan shall describe BMPs or Management Measures/Practices that will be implemented to control soil erosion (both temporary and permanent erosion controls) and reduce or eliminate pollutants in storm water runoff in order to achieve and maintain natural water quality conditions in the affected ASBS. The plan shall include BMPs or

Management Measures/Practices to ensure that trails and culverts are maintained to prevent erosion and minimize waste discharges to ASBS.

3. The plan shall include BMPs or Management Measures/Practices to prevent the discharge of pesticides or other chemicals, including agricultural chemicals, in storm water runoff to the affected ASBS.
 4. The plan shall include BMPs or Management Measures/Practices that address public education and outreach. The goal of these BMPs or Management Measures/Practices is to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The BMPs or Management Measures/Practices shall include signage at camping, picnicking, beach and roadside parking areas, and visitor centers, or other appropriate measures, which notify the public of any applicable requirements of these Special Protections and identify the ASBS boundaries.
 5. The plan shall include BMPs or Management Measures/Practices that address the prohibition against the discharge of trash to ASBS. The BMPs or Management Measures/Practices shall include measures to ensure that adequate trash receptacles are available for public use at visitor facilities, including parking areas, and that the receptacles are adequately maintained to prevent trash discharges into the ASBS. Appropriate measures include covering trash receptacles to prevent trash from being wind blown and periodically emptying the receptacles to prevent overflows.
 6. The plan shall include BMPs or Management Measures/Practices to address runoff from parking areas and other developed features to ensure that the runoff does not alter natural water quality in the affected ASBS. BMPs or Management Measures/Practices shall include measures to reduce pollutant loading in runoff to the ASBS through installation of natural area buffers (LID), treatment, or other appropriate measures.
- B. Maintenance and repair of park and recreation facilities must not result in waste discharges to the ASBS. The practice of road oiling must be minimized or eliminated, and must not result in waste discharges to the ASBS.

III. ADDITIONAL REQUIREMENTS – WATERFRONT AND MARINE OPERATIONS

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with waterfront and marine operations shall comply with the following:

- A. For discharges related to waterfront and marine operations, the discharger shall develop a Waterfront and Marine Operations Management Plan (Waterfront Plan). This plan shall contain appropriate Management Measures/Practices to address nonpoint source pollutant discharges to the affected ASBS.
 1. The Waterfront Plan shall contain appropriate Management Measures/Practices for any waste discharges associated with the operation and maintenance of vessels, moorings, piers, launch ramps, and cleaning stations in order to ensure that beneficial uses are protected and natural water quality is maintained in the affected ASBS.

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2. For discharges from marinas and recreational boating activities, the Waterfront Plan shall include appropriate Management Measures, described in The Plan for California's Nonpoint Source Pollution Control Program, for marinas and recreational boating, or equivalent practices, to ensure that nonpoint source pollutant discharges do not alter natural water quality in the affected ASBS.
 3. The Waterfront Plan shall include Management Practices to address public education and outreach to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The management practices shall include appropriate signage, or similar measures, to inform the public of the ASBS restrictions and to identify the ASBS boundaries.
 4. The Waterfront Plan shall include Management Practices to address the prohibition against trash discharges to ASBS. The Management Practices shall include the provision of adequate trash receptacles for marine recreation areas, including parking areas, launch ramps, and docks. The plan shall also include appropriate Management Practices to ensure that the receptacles are adequately maintained and secured in order to prevent trash discharges into the ASBS. Appropriate Management Practices include covering the trash receptacles to prevent trash from being windblown, staking or securing the trash receptacles so they don't tip over, and periodically emptying the receptacles to prevent overflow.
 5. The discharger shall submit its Waterfront Plan to the by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) within six months of the effective date of these special conditions. The Waterfront Plan is subject to approval by the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The plan must be fully implemented within 18 months of the effective date of the Exception.
- B. The discharge of chlorine, soaps, petroleum, other chemical contaminants, trash, fish offal, or human sewage to ASBS is prohibited. Sinks and fish cleaning stations are point source discharges of wastes and are prohibited from discharging into ASBS. Anthropogenic accumulations of discarded fouling organisms on the sea floor must be minimized.
 - C. Limited-term activities, such as the repair, renovation, or maintenance of waterfront facilities, including, but not limited to, piers, docks, moorings, and breakwaters, are authorized only in accordance with Chapter III.E.2 of the Ocean Plan.
 - D. If the discharger anticipates that the discharger will fail to fully implement the approved Waterfront Plan within the 18 month deadline, the discharger shall submit a technical report as soon as practicable to the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The technical report shall contain reasons for failing to meet the deadline and propose a revised schedule to fully implement the plan.
 - E. The State Water Board or the Regional Water Board may, for good cause, authorize additional time to comply with the Waterfront Plan. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in Section III.A.5. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality. The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration of significant hardship by showing that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

IV. MONITORING REQUIREMENTS

Monitoring is mandatory for all dischargers to assure compliance with the Ocean Plan. Monitoring requirements include both: (A) core discharge monitoring, and (B) ocean receiving water monitoring. The State and Regional Water Boards must approve sampling site locations and any adjustments to the monitoring programs. All ocean receiving water and reference area monitoring must be comparable with the Water Boards' Surface Water Ambient Monitoring Program (SWAMP).

Safety concerns: Sample locations and sampling periods must be determined considering safety issues. Sampling may be postponed upon notification to the State and Regional Water Boards if hazardous conditions prevail.

Analytical Chemistry Methods: All constituents must be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, must be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

A. CORE DISCHARGE MONITORING PROGRAM

1. General sampling requirements for timing and storm size:

Runoff must be collected during a storm event that is greater than 0.1 inch and generates runoff, and at least 72 hours from the previously measurable storm event. Runoff samples shall be collected during the same storm and at approximately the same time when post-

storm receiving water is sampled, and analyzed for the same constituents as receiving water and reference site samples (see section IV B) as described below.

2. Runoff flow measurements

- a. For municipal/industrial storm water outfalls in existence as of December 31, 2007, 18 inches (457mm) or greater in diameter/width (including multiple outfall pipes in combination having a width of 18 inches, runoff flows must be measured or calculated, using a method acceptable to and approved by the State and Regional Water Boards.
- b. This will be reported annually for each precipitation season to the State and Regional Water Boards.

3. Runoff samples – storm events

- a. For outfalls equal to or greater than 18 inches (0.46m) in diameter or width:
 - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
 - (2) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.
 - (3) If an applicant has no outfall greater than 36 inches, then storm water runoff from the applicant's largest outfall shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates).
- b. For outfalls equal to or greater than 36 inches (0.91m) in diameter or width:
 - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
 - (2) samples of storm water runoff shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates); and
 - (3) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.

IV (B)] in addition to (a.) and (b.) above, a minimum of the two largest outfalls or 20 percent of the larger outfalls, whichever is greater, shall be sampled (flow weighted composite samples) at least three times annually during wet weather (storm event) and analyzed for all Ocean Plan Table A constituents, Table B constituents for marine aquatic life protection (except for toxicity, only chronic toxicity for three species shall be required), DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, and Ocean Plan indicator bacteria. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one (the largest) such discharge shall be sampled annually in each Region.

4. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may reduce or suspend core monitoring once the storm runoff is fully characterized. This determination may be made at any point after the discharge is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

B. Ocean Receiving Water and Reference Area Monitoring Program

In addition to performing the Core Discharge Monitoring Program in Section II.A above, all applicants having authorized discharges must perform ocean receiving water monitoring. In order to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS, dischargers may choose either (1) an individual monitoring program, or (2) participation in a regional integrated monitoring program.

1. Individual Monitoring Program: The requirements listed below are for those dischargers who elect to perform an individual monitoring program to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within the affected ASBS. In addition to Core Discharge Monitoring, the following additional monitoring requirements shall be met:
 - a. Three times annually, during wet weather (storm events), the receiving water at the point of discharge from the outfalls described in section (IV)(A)(3)(c) above shall be sampled and analyzed for Ocean Plan Table A constituents, Table B constituents for marine aquatic life, DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, salinity, chronic toxicity (three species), and Ocean Plan indicator bacteria.

The sample location for the ocean receiving water shall be in the surf zone at the point of discharges; this must be at the same location where storm water runoff is sampled. Receiving water shall be sampled prior to (pre-storm) and during (or immediately after) the same storm (post storm). Post storm sampling shall be during the same storm and at approximately the same time as when the runoff is sampled. Reference water quality shall also be sampled three times annually and analyzed for the same constituents pre-storm and post-storm, during the same storm seasons when receiving water is sampled. Reference stations will be determined by the State Water Board's Division of Water Quality and the applicable Regional Water Board(s).

- b. Sediment sampling shall occur at least three times during every five (5) year period. The subtidal sediment (sand or finer, if present) at the discharge shall be sampled and analyzed for Ocean Plan Table B constituents for marine aquatic life, DDT, PCBs, PAHs,

using the amphipod *Eohaustorius estuarius* must be performed.

- c. A quantitative survey of intertidal benthic marine life shall be performed at the discharge and at a reference site. The survey shall be performed at least once every five (5) year period. The survey design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The results of the survey shall be completed and submitted to the State Water Board and Regional Water Board at least six months prior to the end of the permit cycle.
 - d. Once during each five (5) year period, a bioaccumulation study shall be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The study design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*). Based on the study results, the Regional Water Board and the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add or modify additional test organisms (such as shore crabs or fish), or modify the study design appropriate for the area and best available sensitive measures of contaminant exposure.
 - e. Marine Debris: Representative quantitative observations for trash by type and source shall be performed along the coast of the ASBS within the influence of the discharger's outfalls. The design, including locations and frequency, of the marine debris observations is subject to approval by the Regional Water Board and State Water Board's Division of Water Quality.
 - f. The monitoring requirements of the Individual Monitoring Program in this section are minimum requirements. After a minimum of one (1) year of continuous water quality monitoring of the discharges and ocean receiving waters, the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may require additional monitoring, or adjust, reduce or suspend receiving water and reference station monitoring. This determination may be made at any point after the discharge and receiving water is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.
2. Regional Integrated Monitoring Program: Dischargers may elect to participate in a regional integrated monitoring program, in lieu of an individual monitoring program, to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS. This regional approach shall characterize natural water quality, pre- and post-storm, in ocean reference areas near the mouths of identified open space watersheds and the effects of the discharges on natural water quality (physical, chemical, and toxicity) in the ASBS receiving waters, and should include benthic marine aquatic life and bioaccumulation components. The design of the ASBS stratum of a regional integrated monitoring program may deviate from the otherwise prescribed individual monitoring approach (in Section IV.B.1) if approved by the State Water Board's Division of Water Quality and the Regional Water Boards.
 - a. Ocean reference areas shall be located at the drainages of flowing watersheds with minimal development (in no instance more than 10% development), and shall not be located in CWA Section 303(d) listed waterbodies or have tributaries that are 303(d)

listed. Reference areas shall be free of wastewater discharges and anthropogenic non-storm water runoff. A minimum of low threat storm runoff discharges (e.g. stream highway overpasses and campgrounds) may be allowed on a case-by-case basis. Reference areas shall be located in the same region as the ASBS receiving water monitoring occurs. The reference areas for each Region are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean reference water samples must be collected from each station, each from a separate storm during the same storm season that receiving water is sampled. A minimum of one reference location shall be sampled for each ASBS receiving water site sampled per responsible party. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.

- b. ASBS ocean receiving water must be sampled in the surf zone at the location where the runoff makes contact with ocean water (i.e. at "point zero"). Ocean receiving water stations must be representative of worst-case discharge conditions (i.e. co-located at a large drain greater than 36 inches, or if drains greater than 36 inches are not present in the ASBS then the largest drain greater than 18 inches.) Ocean receiving water stations are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean receiving water samples must be collected during each storm season from each station, each from a separate storm. A minimum of one receiving water location shall be sampled in each ASBS per responsible party in that ASBS. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
 - c. Reference and receiving water sampling shall commence during the first full storm season following the adoption of these special conditions, and post-storm samples shall be collected during the same storm event when storm water runoff is sampled. Sampling shall occur in a minimum of two storm seasons. For those ASBS dischargers that have already participated in the Southern California Bight 2008 ASBS regional monitoring effort, sampling may be limited to only one storm season.
 - d. Receiving water and reference samples shall be analyzed for the same constituents as storm water runoff samples. At a minimum, constituents to be sampled and analyzed in reference and discharge receiving waters must include oil and grease, total suspended solids, Ocean Plan Table B metals for protection of marine life, Ocean Plan PAHs, pyrethroids, OP pesticides, ammonia, nitrate, phosphates, and critical life stage chronic toxicity for three species. In addition, within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination shall be analyzed.
3. Waterfront and Marine Operations: In addition to the above requirements for ocean receiving water monitoring, additional monitoring must be performed for marinas and boat launch and pier facilities:
- a. For all marina or mooring field operators, in mooring fields with 10 or more occupied moorings, the ocean receiving water must be sampled for Ocean Plan indicator bacteria, residual chlorine, copper, zinc, grease and oil, methylene blue active substances (MBAS), and ammonia nitrogen.

-
- (1) For mooring field operators opting for an individual monitoring program (Section IV.B.1 above), this sampling must occur weekly (on the weekend) from May through October.
 - (2) For mooring field operators opting to participate in a regional integrated monitoring program (Section IV.B.2 above), this sampling must occur monthly from May through October on a high use weekend in each month. The Water Boards may allow a reduction in the frequency of sampling, through the regional monitoring program, after the first year of monitoring.
- b. For all mooring field operators, the subtidal sediment (sand or finer, if present) within mooring fields and below piers shall be sampled and analyzed for Ocean Plan Table B metals (for marine aquatic life beneficial use), acute toxicity, PAHs, and tributyltin. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed. This sampling shall occur at least three times during a five (5) year period. For mooring field operators opting to participate in a regional integrated monitoring program, the Water Boards may allow a reduction in the frequency of sampling after the first sampling effort's results are assessed.

Glossary

At the point of discharge(s) – Means in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero).

Areas of Special Biological Significance (ASBS) – Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

Design storm – For purposes of these Special Protections, a design storm is defined as the volume of runoff produced from one inch of precipitation per day or, if this definition is inconsistent with the discharger's applicable storm water permit, then the design storm shall be the definition included in the discharger's applicable storm water permit.

Development – Relevant to reference monitoring sites, means urban, industrial, agricultural, grazing, mining, and timber harvesting land uses.

Higher threat discharges - Permitted storm drains discharging equal to or greater than 18 inches, industrial storm drains, agricultural runoff discharged through an MS4, discharges associated with waterfront and marina operations (e.g., piers, launch ramps, mooring fields, and associated vessel support activities, except for passive discharges defined below), and direct discharges associated with commercial or industrial activities to ASBS.

Low Impact Development (LID) – A sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which entails collecting and conveying storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID focuses on using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

Marine Operations – Marinas or mooring fields that contain slips or mooring locations for 10 or more vessels.

Management Measure (MM) - Economically achievable measures for the control of the addition of pollutants from various classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives. For example, in the "marinas and recreational boating" land-use category specified in the Plan for California's Nonpoint Source Pollution Control Program (NPS Program Plan) (SWRCB, 1999), "boat cleaning and maintenance" is considered a MM or the source of a specific class or type of NPS pollution.

Management Practice (MP) - The practices (e.g., structural, non-structural, operational, or other alternatives) that can be used either individually or in combination to address a specific MM class or classes of NPS pollution. For example, for the "boat cleaning and maintenance" MM, specific MPs can include, but are not limited to, methods for the selection of environmentally sensitive hull paints or methods for cleaning/removal of hull copper anti-fouling paints.

Municipal Separate Storm Sewer System (MS4) – A municipally-owned storm sewer system regulated under the Phase I or Phase II storm water program implemented in compliance with Clean Water Act section 402(p). Note that an MS4 program's boundaries are not necessarily congruent with the permittee's political boundaries.

Natural Ocean Water Quality - The water quality (based on selected physical, chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, *i.e.*, an absence of significant amounts of: (a) man-made constituents (*e.g.*, DDT); (b) other chemical (*e.g.*, trace metals), physical (temperature/thermal pollution, sediment burial), and biological (*e.g.*, bacteria) constituents at concentrations that have been elevated due to man's activities above those resulting from the naturally occurring processes that affect the area in question; and (c) non-indigenous biota (*e.g.*, invasive algal bloom species) that have been introduced either deliberately or accidentally by man. Discharges "*shall not alter natural ocean water quality*" as determined by a comparison to the range of constituent concentrations in reference areas agreed upon via the regional monitoring program(s). If monitoring information indicates that *natural ocean water quality* is not maintained, but there is sufficient evidence that a discharge is not contributing to the alteration of natural water quality, then the Regional Water Board may make that determination. In this case, sufficient information must include runoff sample data that has equal or lower concentrations for the range of constituents at the applicable reference area(s).

Nonpoint source – Nonpoint pollution sources generally are sources that do not meet the definition of a point source. Nonpoint source pollution typically results from land runoff, precipitation, atmospheric deposition, agricultural drainage, marine/boating operations or hydrologic modification. Nonpoint sources, for purposes of these Special Protections, include discharges that are not required to be regulated under an NPDES permit.

Non-storm water discharge – Any runoff that is not the result of a precipitation event. This is often referred to as "dry weather flow."

Non-structural control – A Best Management Practice that involves operational, maintenance, regulatory (*e.g.*, ordinances) or educational activities designed to reduce or eliminate pollutants in runoff, and that are not structural controls (*i.e.* there are no physical structures involved).

Physical impossibility - Means any act of God, war, fire, earthquake, windstorm, flood or natural catastrophe; unexpected and unintended accidents not caused by discharger or its employees' negligence; civil disturbance, vandalism, sabotage or terrorism; restraint by court order or public authority or agency; or action or non-action by, or inability to obtain the necessary authorizations or approvals from any governmental agency other than the permittee.

Representative sites and monitoring procedures – Are to be proposed by the discharger, with appropriate rationale, and subject to approval by Water Board staff.

Sheet-flow – Runoff that flows across land surfaces at a shallow depth relative to the cross-sectional width of the flow. These types of flow may or may not enter a storm drain system before discharge to receiving waters.

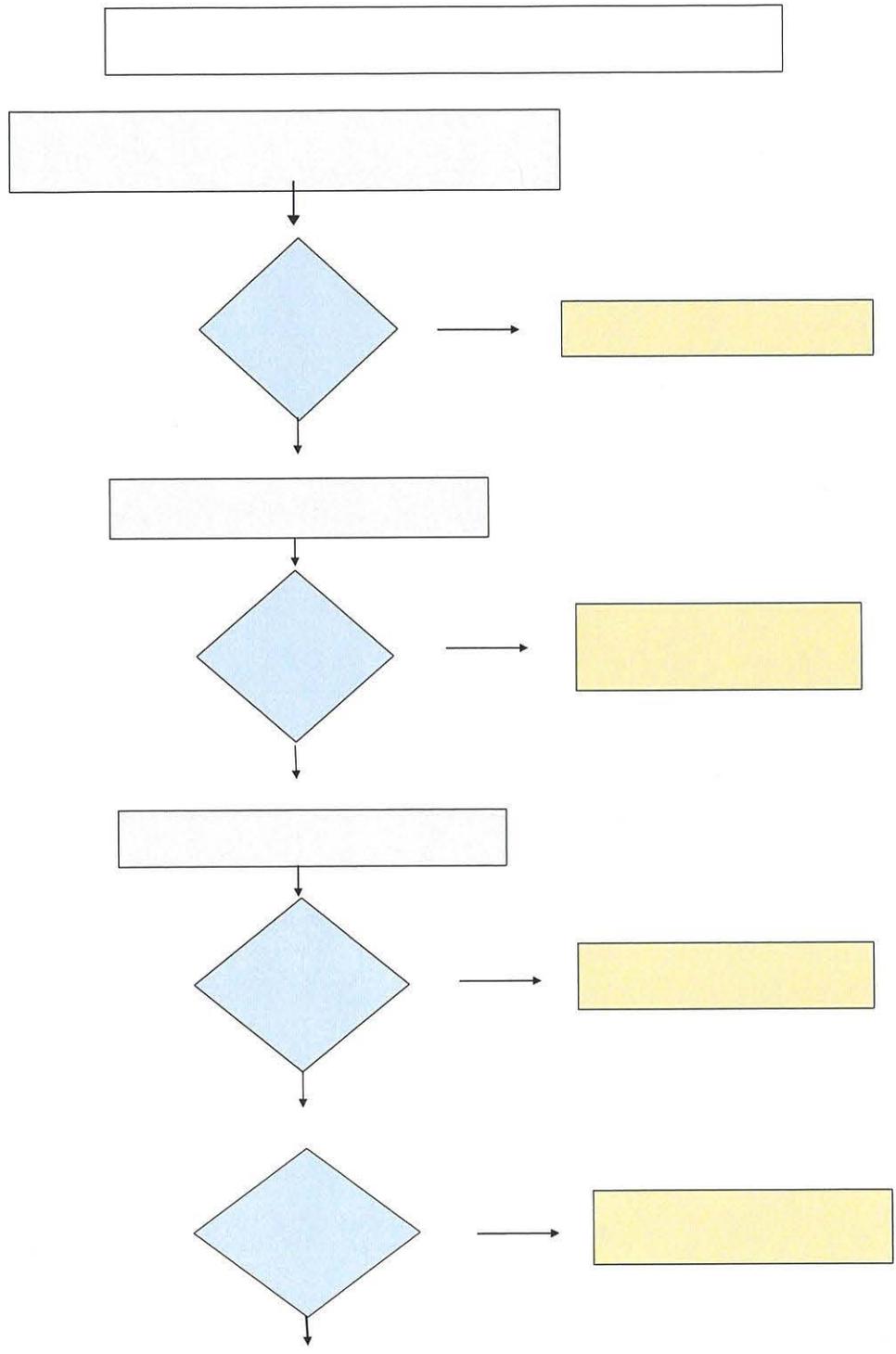
Storm Season – Also referred to as rainy season, means the months of the year from the onset of rainfall during autumn until the cessation of rainfall in the spring.

Structural control – A Best Management Practice that involves the installation of engineering solutions to the physical treatment or infiltration of runoff.

Surf Zone - The surf zone is defined as the submerged area between the breaking waves and the shoreline at any one time.

Surface Water Ambient Monitoring Program (SWAMP) comparable – Means that the monitoring program must 1) meet or exceed 2008 SWAMP Quality Assurance Program Management Plan (QAPP) Measurement Quality Objectives, or 2) have a Quality Assurance Project Plan that has been approved by SWAMP; in addition data must be formatted to match the database requirements of the SWAMP Information Management System. Adherence to the measurement quality objectives in the Southern California Bight 2008 ASBS Regional Monitoring Program QAPP and data base management comprises being SWAMP comparable.

Waterfront Operations - Piers, launch ramps, and cleaning stations in the water or on the adjacent shoreline.



Exceedance of natural water quality*

* When an exceedance of natural water quality occurs, the discharger must comply with section I.A.2.h (for permitted storm water) or section I.B.2.c (for nonpoint sources). Note, when sampling data is available, end-of-pipe effluent concentrations will be considered by the Water Boards in making this determination.

ATTACHMENT G

Standard NPDES Stormwater Permit Provisions

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**Standard Provisions and Reporting Requirements
for
NPDES Stormwater Discharge Permits**

November 19, 2015

A. GENERAL PROVISIONS

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.
2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.
3. **Duty to Comply**
 - a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.
 - b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.
 - c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]
4. **Duty to Mitigate**

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]
5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Water Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application,

or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).

6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.
7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.
8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.

9. Property Rights

This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

The Board or its authorized representatives shall be allowed:

- a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;
- b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;
- c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and
- d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

- a. Violation of any term or condition contained in the Order and Permit;
- b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;
- c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and
- d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

14. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

a. All reports required by the order and permit and other information requested by the Board or U.S. EPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [40 CFR 122.22(d)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

- a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
- b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Compliance Reporting

- a. **Planned Changes**

The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.
- b. **Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance
- c. **Non-compliance Reporting (Twenty-four hour reporting:)**
 - i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent information shall be provided orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.
2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.
3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.
4. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order and permit.
5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:
 - a. an upset occurred and that the Permittee can identify the cause(s) or the upset;
 - b. the permitted facility was being properly operated at the time of the upset;
 - c. the discharger submitted notice of the upset as required in paragraph E.6.d.; and
 - d. the discharger complied with any remedial measures required under A.4.

No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

D. DEFINITIONS

1. Duly authorized representative is one whose:
 - a. Authorization is made in writing by a principal executive officer or ranking elected official;
 - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - c. Written authorization is submitted to the U.S. EPA Region 9. If an authorization becomes no longer accurate because a different individual or position has

responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and U.S. EPA Region 9 prior to or together with any reports, information, or applications to be signed by an authorized representative.

2. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.
3. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the U.S. EPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.
4. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
5. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.
6. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

EXHIBIT 4
to Section 7

**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

**Order R2-2009-0074
NPDES Permit No. CAS612008
October 14, 2009**



**California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit**

**ORDER R2-2009-0074
NPDES PERMIT NO. CAS612008**

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program (Fairfield-Suisun Permittees)

The City of Vallejo and the Vallejo Sanitation and Flood Control District (Vallejo Permittees)

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The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Appendix I) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. This information, including any supplements thereto, and any response to comments on the Tentative Orders, is hereby incorporated by reference.

Existing Permits

2. **Alameda County**—The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 26, 2007, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS0029831 issued by Order No. R2-2003-0021 on February 19, 2003, and amended by Order No. R2-2007-0025 on March 14, 2007, to the Alameda Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
3. **Contra Costa County**—The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated September 30, 2003, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS0029912 issued by Order No. 99-058 on July 21, 1999, amended by Order No. R2-2003-0022 on February 9, 2003, amended by Order Nos. R2-2004-059 and R2-2004-0061 on July 21, 2004, and amended by Order No. R2-2006-0050 on July 12, 2006, to the Contra Costa Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
4. **San Mateo County**—The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County have joined together to form the San Mateo Countywide Water Pollution Prevention

Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated January 23, 2004, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS0029921 issued by Order No. 99-059 on July 21, 1999, amended by Order No. R2-2003-0023 on February 19, 2003, amended by Order Nos. R2-2004-0060 and R2-2004-0062 on July 21, 2004, and amended by Order R2-2007-0027 on March 14, 2007, to the San Mateo Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County**—The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated February 25, 2005, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS029718 issued by Order No. 01-024 on April 21, 2001, amended by Order No. 01-119 on October 17, 2001, and Order No. R2-2005-0035 on July 20, 2005, to the Santa Clara Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
6. **Fairfield-Suisun**—The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated October 17, 2007, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612005 issued by Order No. R2-2003-0034 on April 16, 2003, and amended by Order R2-2007-0026 on March 14, 2007, to the Fairfield-Suisun Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.
7. **Vallejo**—The City of Vallejo and the Vallejo Sanitary District (hereinafter referred to as the Vallejo Permittees) are currently subject to NPDES Permit No. CAS612006 issued by the United States Environmental Protection Agency (USEPA) on April 27, 1999, and that became effective on May 30, 1999, for the discharge of stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions.
8. The Alameda, Contra Costa, San Mateo, Santa Clara, Fairfield-Suisun, and Vallejo Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, USEPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, USEPA published an Interpretive Policy

Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.

10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Board), Office of Administrative Law and the USEPA, where required.
11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, and selenium in San Francisco Bay segments; pesticide associated toxicity in all urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish TMDLs for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, certain early pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.
12. The San Francisco Estuary Project, established pursuant to CWA Section 320, culminated in June 1993 with completion of its Comprehensive Conservation and Management Plan (CCMP) for the preservation, restoration, and enhancement of the San Francisco Bay-Delta Estuary. The 2007 update of the CCMP includes new and revised actions, while retaining many of the original plan's actions. The CCMP includes recommended actions in the areas of aquatic resources, wildlife, wetlands, water use, pollution prevention and reduction, dredging and waterway modification, land use, public involvement and education, and research and monitoring. Recommended actions which may, in part, be addressed through implementation of this Permit include, but are not limited to, the following:
 - (1) ACTION AR-9.1 (New 2007)
Improve understanding of sources, types, and impacts of marine debris in the Estuary.
 - (5) ACTION AR-9.2 (New 2007)
Expand existing marine debris prevention and cleanup programs and develop new initiatives to reduce discharge of debris to waterways.
 - (10) ACTION PO-1.2 (Revised 2007)
Recommend institutional and financial changes needed to place more focus on pollution prevention.
 - (12) ACTION PO-1.6 (Revised 2007)
Implement a comprehensive strategy to reduce pesticides coming into the Estuary.
 - (13) ACTION PO-1.7.1 (New 2007)
Develop product stewardship program for new commercial products to minimize future pollutant releases.

- (14) ACTION PO-1.8 (New 2007)
Develop and implement programs to prevent pollution of the Estuary by other harmful pollutants like trash, bacteria, sediments, and nutrients.
- (15) ACTION PO-2.1 (Revised 2007)
Pursue a mass emissions strategy to reduce pollutant discharges into the Estuary from point and nonpoint sources and to address the accumulation of pollutants in estuarine organisms and sediments.
- (16) ACTION PO-2.4 (Revised 2007)
Improve the management and control of urban runoff from public and private sources.
- (18) ACTION PO-3.3 (New 2007)
Accomplish large-scale improvements to Bay-Delta area infrastructure and implement pollution prevention strategies to prevent pollution threats to public health and wildlife.
- (19) ACTION PO-4.1 (New 2007)
Increase regulatory incentives for municipalities, through urban runoff and other programs, to invest in projects that restore or enhance stream and wetland functions.
- (20) ACTION LU-1.1 (Revised 2007)
Local land use jurisdiction's General Plans should incorporate watershed protection goals for wetlands and stream environments and to reduce pollutants in runoff.
- (21) ACTION LU-1.1.1 (New 2007): Provide assistance to local agencies to ensure that applicable nonpoint source control elements are incorporated into local government and business practices.
- (22) ACTION LU-1.5 (LU-3.2 in 1993 CCMP; Revised 2007)
Provide incentives and promote the use of building, planning, and maintenance guidelines for site planning and implementation of best management practices (BMPs) as related to stormwater and encourage local jurisdictions to adopt these guidelines as local ordinances.
- (23) ACTION LU-1.6 (New 2007)
Continue and enhance training and certification for planners, public works departments, consultants, and builders on sustainable design and building practices with the goal of preventing or minimizing alteration of watershed functions (e.g., flood water conveyance, groundwater infiltration, stream channel and floodplain maintenance), and preventing construction-related erosion and post-construction pollution.
- (24) ACTION LU-2.7 (New 2007)
Adopt and implement policies and plans that protect and restore water quality, flood water storage, and other natural functions of stream and wetland systems.
- (25) ACTION LU-3.1 (New 2007)
Promote, encourage, and support collaborative partnerships with broad stakeholder representation, such as watershed councils, in order to develop diverse community-based approaches to long-term stewardship.
- (26) ACTION LU-4.1 (Revised 2007)
Educate the public about how human actions impact the Estuary and its watersheds.
- (28) ACTION PI-2.5 (Revised 2007)
Assist in the development of long-term educational programs designed to prevent pollution to the Estuary's ecosystem and provide assistance to other programs as needed.
13. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

14. Stormwater runoff is generated from various land uses in all the hydrologic sub basins in the Basin and discharges into watercourses, which in turn flow into Central, Lower and South San Francisco Bay.
15. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not limited to, support for aquatic life; and other pollutants which can cause aquatic toxicity in the receiving waters.
16. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to US EPA Phase II stormwater regulations. Under Phase II, the Water Board can permit these federal, State, and regional entities through use of the Statewide Phase II NPDES General Permit.
17. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.
18. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.
19. This Order supersedes and rescinds Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, R2-2003-0034, and supersedes NPDES Permit Nos. CAS0029831, CAS0029912, CAS0029921, CAS029718, CAS0612005, and CAS612006.

This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective December 1, 2009, provided the Regional Administrator, USEPA, Region 9, has no objections.

IT IS HEREBY ORDERED that the Permittees, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted hereunder, shall comply with the following:

A. DISCHARGE PROHIBITIONS

- A.1.** The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into, storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.
- A.2.** It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.

B. RECEIVING WATER LIMITATIONS

- B.1.** The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:
- a. Floating, suspended, or deposited macroscopic particulate matter, or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.
- B.2.** The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are adopted and approved by the State Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.15.

If exceedance(s) of water quality standards or water quality objectives (collectively, WQs) persist in receiving waters, the Permittees shall comply with the following procedure:

- C.1.a.** Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable WQS, the Permittee(s) shall notify, within no more than 30 days, and thereafter, except for any exceedances of WQs for pesticides, trash, mercury, polychlorinated biphenols, copper, polybrominated diphenyl ethers, and selenium that are addressed pursuant to Provisions C.8 through C.14 of this Order, submit a report to the Water Board that describes BMPs that are currently being implemented, and the current level of implementation, and additional BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of WQs. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and
- C.1.b.** Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as the Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same WQs unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure development and implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater discharges and polluted stormwater to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

- i. Task Description** – Asphalt/Concrete Removal, Cutting, Installation and Repair - The Permittees shall develop and implement appropriate BMPs at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving or repair maintenance activities, such as those described in the California Stormwater Quality Association’s Handbook for Municipal Operations.
- ii. Implementation Levels**
 - (1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer system is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.
 - (2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from such work sites upon completion of work. The Permittees shall require cleanup of all construction remains, spills and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association’s (BASMAA’s) Blueprint for a Clean Bay.
- iii. Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

- i. Task Description** – The Permittees shall implement, and require to be implemented, BMPs for pavement washing, mobile cleaning, pressure wash operations in such locations as parking lots and garages, trash areas, gas station fueling areas, and sidewalk and plaza cleaning, which prohibit the discharge of polluted wash water and non-stormwater to storm drains. The Permittees shall implement the BMPs included in BASMAA’s Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

- ii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

i. Task Description

- (1) The Permittees shall implement appropriate BMPs to prevent polluted stormwater and non-stormwater discharges from bridges and structural maintenance activities directly over water or into storm drains.
- (2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.

ii. Implementation Levels

- (1) The Permittees shall prevent all debris, including structural materials and coating debris, such as paint chips, or other debris and pollutants generated in bridge and structure maintenance or graffiti removal from entering storm drains or water courses.
- (2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste or wash water due to graffiti removal from entering storm drains or watercourses.
- (3) The Permittees shall determine the proper disposal method for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts about these proper capture and disposal methods for the wastes generated.

- iii. **Reporting** – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.d. Stormwater Pump Stations

The objective of this sub-provision is to prevent the discharge of water with low dissolved oxygen (DO) from pump stations, and to explore the use of pump stations for trash capture and removal from waters to protect beneficial uses of receiving waters.

- i. **Task Description** – Operation and Maintenance of Stormwater Pump Stations – The Permittees shall develop and implement measures to operate, inspect, and maintain these facilities to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in the stormwater discharges to comply with WQSs.
- ii. **Implementation Levels** – The Permittees shall comply with the following implementation measures to reduce polluted water discharges from Permittee-owned or operated pump stations:

- (1) Complete an inventory of pump stations within each Permittee's jurisdiction, including locations, and key characteristics¹ by March 1, 2010.
- (2) Inspect and collect DO data from all pump stations twice a year during the dry season after July 1, starting in 2010. DO monitoring is exempted where all discharge from a pump station remains in the stormwater collection system or infiltrates into a dry creek immediately downstream.
- (3) If DO levels are at or below 3 milligrams per liter (3 mg/L), apply corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 mg/L. Verify corrective actions are effective by increasing DO monitoring interval to weekly until two weekly samples are above 3 mg/L.
- (4) Starting in fall 2010, inspect pump stations a minimum of two times during the wet season in the first business day after ¼-inch and larger storm events after a minimum of a two week antecedent period with no precipitation. Post-storm inspections shall collect and report presence and quantity estimates of trash, including presence of odor, color, turbidity, and floating hydrocarbons. Remove debris and trash and replace any oil absorbent booms, as needed.

iii. **Reporting** – The Permittees shall report information resulting from C.2.d.ii.(2)-(4), including DO monitoring data and subsequent corrective actions taken to verify compliance with the 3 mg/L implementation level, in their Annual Report, and maintain records of inspection and maintenance activities and volume or mass of waste materials removed from pump stations.

C.2.e. Rural Public Works Construction and Maintenance

- i. **Task Description** – Rural Road and Public Works Construction and Maintenance - For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing or open space uses. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Game and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

¹ Characteristics include name of pump station, latitude and longitude in WGS 84, number of pumps, drainage area in acres, dominant land use(s), first receiving water body, maximum pumping capacity of station in gallons per minute (gpm), flow measurement capability (Y or N), flow measurement method, average wet season discharge rate in gpm, dry season discharge (Y, N, or unknown), nearest municipal wastewater treatment plant, wet well storage capacity in gallons, trash control (Y or N), trash control measure, and date built or last updated.

ii. Implementation Level

- (1) The Permittees shall develop, where they do not already exist, and implement BMPs for erosion and sediment control measures during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities, by April 1, 2010.
- (2) The Permittees shall develop and implement appropriate BMPs for the following activities, which minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities:
 - (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;
 - (b) Identification and prioritization of rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;
 - (c) Construction of roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;
 - (d) Development and implementation of an inspection program to maintain rural roads' structural integrity and prevent impacts on water quality;
 - (e) Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts and excessive erosion;
 - (f) Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and
 - (g) Replacement of existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.
- (3) The Permittees shall develop or incorporate existing training and guidance on permitting requirements for rural public works activities so as to stress the importance of proper planning and construction to avoid water quality impacts.
- (4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for the rural public works construction and maintenance activities in their Annual Report, including reporting on increased maintenance in priority areas.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

- (1) The Permittees shall prepare, implement, and maintain a site specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle maintenance, heavy equipment and maintenance vehicle parking areas, and material storage facilities to comply with water quality standards. Each SWPPP shall incorporate all applicable BMPs that are described in the California Stormwater Quality Association's Handbook for Municipal Operations and the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda, as appropriate.
- (2) The requirements in this provision shall apply only to facilities that are not already covered under the State Board's Industrial Stormwater NPDES General Permit.
- (3) The site specific SWPPPs for corporation yards shall be completed by July 1, 2010.

ii. Implementation Level

- (1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters and street sweeper, vacuor, and other related equipment cleaning wash water. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.
- (2) Routinely inspect corporation yards to ensure that no non-stormwater discharges are entering the storm drain system and, during storms, pollutant discharges are prevented to the maximum extent practicable. At a minimum, an inspection shall occur before the start of the rainy season.
- (3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency.
- (4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal

wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.

- (5) Outdoor storage areas containing waste pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. **Reporting** – The Permittees shall report on implementation of SWPPPs, the results of inspections, and any follow-up actions in their Annual Report.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

i. Task Description – At a minimum each Permittee shall:

- (1) Have adequate legal authority to implement all requirements of Provision C.3;
- (2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;
- (3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;
- (4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;
- (5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;
- (6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;
- (7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:
 - Storm drain stenciling.

- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping.
 - Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
 - Covered trash, food waste, and compactor enclosures.
 - Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
 - Dumpster drips from covered trash and food compactor enclosures.
 - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.
- (8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).

- ii. **Implementation Level** – Most of the elements of this task should already be fully implemented because they are required in the Permittees' existing stormwater permits.

Due Dates for Full Implementation – Immediate for C.3.a.i.(1)-(5), May 1, 2010 for C.3.a.i.(6)-(7), and December 1, 2010 for C.3.a.i.(8). For Vallejo Permittees: December 1, 2010 for C.3.a.i.(1)-(8)

- iii. **Reporting** – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2011 Annual Report.

C.3.b. Regulated Projects

- i. **Task Description** – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility² in accordance with Provisions C.3.c and C.3.d, unless the Provision C.3.e alternate compliance options are evoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by

² **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other,

the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

ii. Regulated Projects are defined in the following categories:

(1) Special Land Use Categories

- (a) New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:
 - (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
 - (ii) Retail gasoline outlets;
 - (iii) Restaurants (SIC Code 5812); or
 - (iv) Uncovered parking lots that are stand-alone or part of any other development project. This category includes the top uncovered portion of parking structures unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.
- (b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:**
 - (i) Interior remodels;
 - (ii) Routine maintenance or repair such as:
 - roof or exterior wall surface replacement,
 - pavement resurfacing within the existing footprint.
- (c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **more than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).**
- (d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).**

- (e) For any private development project in the categories specified in Provisions C.3.b.ii.(1)(a)(i)-(iv) for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for the 5000 square feet threshold, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the lower 5000 square feet impervious surface threshold specified in Provision C.3.b.ii.(1).
- (f) For any private development project in the categories specified in Provisions C.3.b.ii.(1)(a)(i)-(iv) with an application deemed complete after the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011, for the 5000 square feet threshold.
- (g) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the lower 5000 square feet of impervious surface threshold (for classification as a Regulated Project) shall not apply.

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

Beginning December 1, 2011, all references to 10,000 square feet in Provision C.3.b.ii.(1) change to 5,000 square feet.

(2) Other Development Projects

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels.
 - Routine maintenance or repair such as:
 - roof or exterior wall surface replacement, or
 - pavement resurfacing within the existing footprint.
- (a) Where a redevelopment project results in an alteration of **more than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).
- (b) Where a redevelopment results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

- (a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- (b) Widening of existing streets or roads with additional traffic lanes.
- (i) Where the addition of traffic lanes results in an alteration of **more than 50 percent** of the impervious surface of an existing street or road that was not subject to Provision C.3, **the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design** (i.e.,

stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

- (ii) Where the addition of traffic lanes results in an alteration of **less than 50 percent** of the impervious surface of an existing street or road that was not subject to Provision C.3, **only the new and/or replaced impervious surface of the project must be included in the treatment system design** (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system must be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.
- (c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).
- (d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) are:
- Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
 - Bicycle lanes that are built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
 - Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
 - Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.³
 - Caltrans highway projects and associated facilities.
- (e) For any private road or trail project described by Provisions C.3.b.ii.(4)(b) or (c) for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, the requirements of Provisions C.3.b.ii.(4)(b) or (c) to classify the project as a Regulated Project shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for Provisions C.3.b.ii.(4)(b) and (c), the project applicant has not taken

³ **Permeable surfaces** include pervious concrete, porous asphalt, unit pavers, and granular materials.

any action to obtain the necessary approvals from the Permittee, the project will then be classified as a Regulated Project under Provisions C.3.b.ii.(4)(b) or (c).

- (f) For any private road or trail project with an application deemed complete after the Permit effective date, the requirements of Provisions C.3.b.i.(4)(b) or (c) to classify the project as a Regulated Project shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011, for Provisions C.3.b.ii.(4)(b) and (c).
- (g) For any public road or trail project for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provisions C.3.b.i.(4)(b) or (c) to classify the project as a Regulated Project shall not apply.

Effective Date – Immediate for C.3.b.ii.(4)(a) and (d)-(g), and December 1, 2011, for C.3.b.ii.(4)(b) and (c). For Vallejo Permittees: Immediate for C.3.b.ii.(4)(d)-(g), and December 1, 2011 for C.3.b.ii.(4)(a)-(c).

iii. Green Street Pilot Projects

The Permittees shall cumulatively complete ten pilot green street projects that incorporate LID techniques for site design and treatment in accordance with Provision C.3.c and that provide stormwater treatment sized in accordance with Provision C.3.d. It is also desirable that they meet or exceed the Bay-Friendly Landscape Scorecard minimum requirements (see www.BayFriendly.org).

- (1) Parking lot projects that provide LID treatment in accordance with Provisions C.3.c and Provision C.3.d. for stormwater runoff from the parking lot and street may be considered pilot green street projects.
- (2) A Regulated Project (as defined in Provision C.3.b.ii) may not be counted as one of the ten pilot green street projects.
- (3) At least two pilot green street projects must be located in each of the following counties: Alameda, Contra Costa, San Mateo, and Santa Clara.
- (4) The Permittees shall construct the ten pilot green street projects in such a manner that they, as a whole:
 - (a) Are representative of the various types of streets: arterial, collector, and local; and
 - (b) Contain the following key elements:
 - (i) Stormwater storage for landscaping reuse or stormwater treatment and/or infiltration for groundwater replenishment through the use of natural feature systems;
 - (ii) Creation of attractive streetscapes that enhance neighborhood livability by enhancing the pedestrian environment and introducing park-like elements into neighborhoods;

- (iii) Service as an urban greenway segment that connects neighborhoods, parks, recreation facilities, schools, mainstreets, and wildlife habitats;
 - (iv) Parking management that includes maximum parking space requirements as opposed to minimum parking space requirements, parking requirement credits for subsidized transit or shuttle service, parking structures, shared parking, car sharing, or on-street diagonal parking;
 - (v) Meets broader community goals by providing pedestrian and, where appropriate, bicycle access; and
 - (vi) Located in a Priority Development Area as designated under the Association of Bay Area Government's and Metropolitan Transportation Commission's FOCUS⁴ program.
- (5) The Permittees shall conduct appropriate monitoring of these projects to document the water quality benefits achieved. Appropriate monitoring may include modeling using the design specifications and specific site conditions.

Due Date – All pilot green street projects shall be completed by December 1, 2014.

- iv. Implementation Level** – All elements of Provision C.3.b.i.-iii shall be fully implemented by the effective/due dates set forth in their respective sub-provision, and a database or equivalent tabular format shall be developed and maintained that contains all the information listed under Reporting (Provision C.3.b.v.).

Due Dates for Full Implementation – See specific Effective Dates listed under Provisions C.3.b.ii& iii. The database or equivalent tabular format required by Provision C.3.b.iv shall be developed by December 1, 2010. (For Vallejo Permittees: December 1, 2011)

v. Reporting

(1) Annual Reporting – C.3.b.ii. Regulated Projects

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

- (a) Project Name, Number, Location (cross streets), and Street Address;
- (b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description;
- (c) Project watershed;
- (d) Total project site area and total area of land disturbed;

⁴ FOCUS is a regional incentive-based development and conservation strategy for the Bay Area.

- (e) Total new impervious surface area and/or total replaced impervious surface area;
 - (f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
 - (g) Status of project (e.g., application date, application deemed complete date, project approval date);
 - (h) Source control measures;
 - (i) Site design measures;
 - (j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;
 - (k) Operation and maintenance responsibility mechanism for the life of the project.
 - (l) Hydraulic Sizing Criteria used;
 - (m) Alternative compliance measures for Regulated Project (if applicable)
 - (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.v.(a) – (l) for the offsite project; and
 - (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.v.(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and
 - (n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.
- (2) **Pilot Green Streets Project Reporting - Provision C.3.b.iii.**
- (a) On an annual basis, the Permittees shall report on the status of the pilot green street projects.
 - (b) For each completed project, the Permittees shall report the capital costs, operation and maintenance costs, legal and procedural arrangements in place to address operation and maintenance and its associated costs, and the sustainable landscape measures incorporated in the project including, if relevant, the score from the Bay-Friendly Landscape Scorecard.
 - (c) The 2013 Annual Report shall contain a summary of all green street projects completed by January 1, 2013. The summary shall include for each completed project the following information:
 - (i) Location of project
 - (ii) Size of project, including total impervious surface treated
 - (iii) Map(s) of project showing areas where stormwater runoff will be treated by LID measures

- (iv) Specific type(s) of LID treatment measures included
- (v) Total and specific costs of project
- (vi) Specific funding sources for project and breakdown of percentage paid by each funding source
- (vii) Lessons learned, including recommendations to facilitate funding and building of future projects
- (viii) Identification of responsible party and funding source for operation and maintenance.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

Task Description

i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) Source Control Requirements

Require all Regulated Projects to implement source control measures onsite that at a minimum, shall include the following:

- (a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
 - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
 - Dumpster drips from covered trash, food waste and compactor enclosures;
 - Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
 - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
 - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;
- (b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;
- (c) Properly designed trash storage areas;

- (d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;
 - (e) Efficient irrigation systems; and
 - (f) Storm drain system stenciling or signage.
- (2) **Site Design and Stormwater Treatment Requirements**
- (a) Require each Regulated Project to implement at least the following design strategies onsite:
 - (i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
 - (ii) Conserve natural areas, including existing trees, other vegetation, and soils;
 - (iii) Minimize impervious surfaces;
 - (iv) Minimize disturbances to natural drainages; and
 - (v) Minimize stormwater runoff by implementing one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with permeable surfaces.³
 - Construct driveways, bike lanes, and/or uncovered parking lots with permeable surfaces.³
 - (b) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.
 - (i) LID treatment measures are harvesting and re-use, infiltration, evapotranspiration, or biotreatment.
 - (ii) A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site.
 - (iii) Infeasibility to implement harvesting and re-use, infiltration, or evapotranspiration at a project site may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
 - Locations within 100 feet of a groundwater well used for drinking water.
 - Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
 - Locations with potential geotechnical hazards.
 - Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
 - Locations with tight clay soils that significantly limit the infiltration of stormwater.
- (iv) By May 1, 2011, the Permittees, collaboratively or individually, shall submit a report on the criteria and procedures the Permittees shall employ to determine when harvesting and re-use, infiltration, or evapotranspiration is feasible and infeasible at a Regulated Project site. This report shall, at a minimum, contain the information required in Provision C.3.c.iii.(1).
- (v) By December 1, 2013, the Permittees, collaboratively or individually, shall submit a report on their experience with determining infeasibility of harvesting and re-use, infiltration, or evapotranspiration at Regulated Project sites. This report shall, at a minimum, contain the information required in Provision C.3.iii.(2).
- (vi) Biotreatment systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate. The planting and soil media for biotreatment systems shall be designed to sustain plant growth and maximize stormwater runoff retention and pollutant removal. By December 1, 2010, the Permittees, working collaboratively or individually, shall submit for Water Board approval, a proposed set of model biotreatment soil media specifications and soil infiltration testing methods to verify a long-term infiltration rate of 5 to 10 inches/hour. This submittal to the Water Board shall, at a minimum, contain the information required in Provision C.3.c.iii.(3). Once the Water Board approves biotreatment soil media specifications and soil infiltration testing methods, the Permittees shall ensure that biotreatment systems installed to meet the requirements of Provision C.3.c and d comply with the Water Board-approved minimum specifications and soil infiltration testing methods.
- (vii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. By May 1, 2011, the Permittees shall submit for Water Board approval, proposed minimum specifications for green roofs.

This submittal to the Water Board shall, at a minimum, contain the information required in Provision C.3.c.iii.(4). Once the Water Board approves green roof minimum specifications, the Permittees shall ensure that green roofs installed to meet the requirements of Provision C.3.c and d comply with the Water Board-approved minimum specifications.

- (c) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(b) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Implementation Level – All elements of the tasks described in Provision C.3.c.i shall be fully implemented.

Due Date for Full Implementation – December 1, 2011

- (1) For any private development project for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, Provision C.3.c.i shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the requirements of Provision C.3.c.i.
- (2) For any private development project with an application deemed complete after the Permit effective date, the requirements of Provision C.3.c.i shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011.
- (3) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provision C.3.c.i shall not apply.

iii. Reporting

- (1) Feasibility/Infeasibility Criteria Report - By May 1, 2011, the Permittees, collaboratively or individually, shall submit a report to the Water Board containing the following information:
 - Literature review and discussion of documented cases/sites, particularly in the Bay Area and California, where infiltration, harvesting and reuse, or evapotranspiration have been demonstrated to be feasible and/or infeasible.
 - Discussion of proposed feasibility and infeasibility criteria and procedures the Permittees shall employ to make a determination of when biotreatment will be allowed at a Regulated Project site.

- (2) Status Report on Application of Feasibility/Infeasibility Criteria – By December 1, 2013, the Permittees shall submit a report to the Water Board containing the following information:
- Discussion of the most common feasibility and infeasibility criteria employed since implementation of Provision C.3.c requirements, including site-specific examples;
 - Discussion of barriers, including institutional and technical site specific constraints, to implementation of harvesting and reuse, infiltration, or evapotranspiration, and proposed strategies for removing these identified barriers;
 - If applicable, discussion of proposed changes to feasibility and infeasibility criteria and rationale for the changes; and
 - Guidance for the Permittees to make a consistent and appropriate determination of the feasibility of harvesting and reuse, infiltration, or evapotranspiration for each Regulated Project.
- (3) Model Biotreatment Soil Media Specifications - By December 1, 2010, the Permittees, collaboratively or individually, shall submit a report to the Water Board containing the following information:
- Proposed soil media specifications for biotreatment systems;
 - Proposed soil testing methods to verify a long-term infiltration rate of 5-10 inches/hour;
 - Relevant literature and field data showing the feasibility of the minimum design specifications;
 - Relevant literature, field, and analytical data showing adequate pollutant removal and compliance with the Provision C.3.d hydraulic sizing criteria; and
 - Guidance for the Permittees to apply the minimum specifications in a consistent and appropriate manner.
- (4) Green Roof Minimum Specifications - By May 1, 2011, the Permittees, collaboratively or individually, shall submit a report to the Water Board containing the following information:
- Proposed minimum design specifications for green roofs;
 - Relevant literature and field data showing the feasibility of the minimum design specifications;
 - Relevant literature, field, and analytical data showing adequate pollutant removal and compliance with the Provision C.3.d hydraulic sizing criteria;
 - Discussion of data and lessons learned from already installed green roofs;
 - Discussion of barriers, including institutional and technical site specific constraints, to installation of green roofs and proposed strategies for removing these identified barriers; and

- Guidance for the Permittees to apply the minimum specifications in a consistent and appropriate manner.
- (5) Report the method(s) of implementation of Provisions C.3.c.i above in the 2012 Annual Report. For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.v, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

- i. **Task Description** – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:
- (1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:
 - (a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or
 - (b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of the California Stormwater Quality Association’s Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.
 - (2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:
 - (a) 10 percent of the 50-year peak flowrate;
 - (b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
 - (c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
 - (3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.
- ii. **Implementation Level** – The Permittees shall immediately require the controls in this task.
- Due Date for Full Implementation** – Immediate, except December 1, 2010, for Vallejo Permittees.
- iii. **Reporting** – Permittees shall use the reporting tables required in Provision C.3.b.v.

iv. Limitations on Use of Infiltration Devices in Stormwater Treatment Systems

- (1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil. Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).
- (2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:
 - (a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;
 - (b) Adequate maintenance is provided to maximize pollutant removal capabilities;
 - (c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);
 - (d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;
 - (e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and
 - (f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and

underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.c.

- i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.c in accordance with one of the two options listed below:
 - (1) **Option 1: LID Treatment at an Offsite Location**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.
 - (2) **Option 2: Payment of In-Lieu Fees**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees⁵ to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.⁶ The Regional Project must achieve a net environmental benefit.
 - (3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite projects must be constructed by the end of construction of the Regulated Project. If more time is needed to construct the offsite project, for each additional year, up to three years, after the construction of the Regulated Project, the offsite project must provide an additional 10% of the calculated equivalent quantity of both stormwater runoff and pollutant loading. Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of the Regional Project may be

⁵ **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

⁶ **Regional Project** – A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.

extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

ii. Special Projects

- (1) When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and automobile-related pollutant impacts. Incentive LID treatment reduction credits approved by the Water Board may be applied to these types of Special Projects.
- (2) By December 1, 2010, the Permittees shall submit a proposal to the Water Board containing the following information:
 - Identification of the types of projects proposed for consideration of LID treatment reduction credits and an estimate of the number and cumulative area of potential projects during the remaining term of this Permit for each type of project;
 - Identification of institutional barriers and/or technical site-specific constraints to providing 100% LID treatment onsite that justify the allowance for non-LID treatment measures onsite;
 - Specific criteria for each type of Special Project proposed, including size, location, minimum densities, minimum floor area ratios, or other appropriate limitations;
 - Identification of specific water quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite;
 - Proposed LID treatment reduction credit for each type of Special Project and justification for the proposed credits. The justification shall include identification and an estimate of the specific water quality benefit provided by each type of Special Project proposed for LID treatment reduction credit; and
 - Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

iii. Effective Date – December 1, 2011.

iv. Implementation Level

- (1) For any private development project for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, Provisions C.3.e.i-ii shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant’s submittal of supplemental information to the original application, plans, or other documents required for any necessary

approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the requirements of Provision C.3.e.i-ii.

- (2) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provisions C.3.e.i-ii shall not apply.
 - (3) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer
 - (4) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.
- v. **Reporting** –The Permittees shall submit the ordinance/legal authority and procedural changes made, if any, to implement Provision C.3.e with their 2012 Annual Report. Annual reporting thereafter shall be done in conjunction with reporting requirements under Provision C.3.b.v.

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in the 2012 Annual Report and all subsequent Annual Reports.

C.3.f. Alternative Certification of Stormwater Treatment Systems

- i. **Task Description** – In lieu of reviewing a Regulated Project’s adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project’s adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California, or staff of another Permittee subject to the requirements of this Permit.
- ii. **Implementation Level** – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, California

Stormwater Quality Association (CASQA), or the equivalent, may be considered qualifying training.

- iii. **Reporting** – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

- i. **Hydromodification Management (HM) Projects** are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded within the requirements of Attachments B–F. A project that does not increase impervious surface area over the pre-project condition is not an HM Project. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

- ii. **HM Standard**

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

- (1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 % of the pre-project 2-year peak flow⁷ up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow. Contra Costa Permittees, when using pre-sized and pre-designed Integrated Management Practices (IMPs) per Attachment C of this Order, are not required to meet the low-flow criterion of 10% of the 2-year peak flow. These IMPs are designed to control 20% of the 2-year peak flow. After the Contra Costa Permittees conduct the required monitoring specified in Attachment C, the design of these IMPs will be reviewed.
- (2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent

⁷ Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

over more than 10 percent of the length of the curve corresponding to the range of flows to control.

- (3) **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
- (4) **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.
- (5) **Existing HM Control Requirements:** The Water Board has adopted HM control requirements for all Permittees (except for the Vallejo Permittees), and these adopted requirements are attached to this Order as listed below. The Permittees shall comply with all requirements in their own Permittee-specific Attachment, unless otherwise specified by this Order. In all cases, the HM Standard shall be achieved.
 - Attachment B for Alameda Permittees
 - Attachment C for Contra Costa Permittees
 - Attachment D for Fairfield-Suisun Permittees
 - Attachment E for San Mateo Permittees
 - Attachment F for Santa Clara Permittees

iii. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof.

- (1) **Onsite HM controls** are flow duration control structures and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.
- (2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.
- (3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.⁸

iv. Reporting

For each HM Project approved during the reporting period, the following information shall be reported electronically in tabular form. This information shall be added to the required reporting information specified in Provision C.3.b.v.

- (1) Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control;
- (2) Method used by the project proponent to design and size the device or method used to meet the HM Standard; and
- (3) Other information as required in the Permittee's existing HM requirements, as shown in Attachments B–F.

v. Vallejo Permittees shall complete the following tasks in lieu of complying with Provisions C.3.g.i-iv.

- (1) Develop a Hydrograph Modification Management Plan (HMP) for meeting the requirements of Provisions C.3.g.i–iv. The Vallejo Permittees' HMP shall be subject to approval by the Water Board.
- (2) Vallejo Permittees shall include the following in their HMP:
 - (a) A map of the City of Vallejo, delineating areas where the HM Standard applies. The HM Standard shall apply in all areas except where a project:
 - discharges stormwater runoff into creeks or storm drains that are concrete-lined or significantly hardened (e.g., with rip-rap, sackrete) downstream to their outfall in San Francisco Bay;
 - discharges to an underground storm drain discharging to the Bay; or
 - is located in a highly developed watershed.⁹

⁸ In-stream control projects require a Stream Alteration Agreement from the California Department of Fish & Game, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

⁹ Within the context of Provision C.3.g., "highly developed watersheds" refers to catchments or subcatchments that are 65% impervious or more.

However, plans to restore a creek reach may reintroduce the applicability of HM controls, and would need to be addressed in the HMP;

- (b) A thorough technical description of the methods project proponents may use to meet the HM Standard. Vallejo Permittees shall use the same methodologies, or similar methodologies, to those already in use in the Bay Area to meet the HM Standard. Contra Costa sizing charts may be used on projects up to ten acres after any necessary modifications are made to the sizes to control runoff rates and durations from ten percent of the pre-project 2-year peak flow to the pre-project 10-year peak flow, and adjustments are made for local rainfall and soil types;
 - (c) A description of any land use planning measures the City of Vallejo will take (e.g., stream buffers and stream restoration activities, including restoration-in-advance of floodplains, revegetation, and use of less-impacting facilities at points of discharge) to allow expected changes in stream channel cross sections, stream vegetation, and discharge rates, velocities, and/or durations without adverse impacts on stream beneficial uses;
 - (d) A description of how the Vallejo Permittees will incorporate these requirements into their local approval processes, and a schedule for doing so; and
 - (e) Guidance for City of Vallejo project proponents explaining how to meet the HM Standard.
- (3) Vallejo Permittees shall complete the HMP according to the schedule below. All required documents shall be submitted acceptable to the Executive Officer, except the HMP, which shall be submitted to the Water Board for approval. Vallejo Permittees shall report on the status of HMP development and implementation in each Annual Report and shall also provide a summary of projects incorporating measures to address Provision C.3.g and the measures used.
- By April 1, 2011, submit a detailed workplan and schedule for completion of the information required in Provision C.3.g.v.(2).
 - By December 1, 2011, submit the map required in Provision C.3.g.v.(2)(a).
 - By April 1, 2012, submit a draft HMP.
 - By December 1, 2012, provide responses to Water Board comments on the draft HMP so that the final HMP is submitted for Water Board approval by July 1, 2013.
 - Upon adoption by the Water Board, implement the HMP, which shall include the requirements of this measure. Before approval of the HMP by the Water Board, Vallejo Permittees shall encourage early implementation of measures likely to be included in the HMP.

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

- i. **Task Description** – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.
- ii. **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
 - (1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
 - (a) The project proponent’s signed statement accepting responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the onsite, joint, and/or offsite installed stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;
 - (c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity; or
 - (d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.
 - (2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.
 - (3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed stormwater treatment system(s) and HM control(s) (if any).
 - (4) A written plan and implementation of the plan that describes O&M (including inspection) of all Regional Projects and regional HM controls that are Permittee-owned and/or operated.
 - (5) A database or equivalent tabular format of all Regulated Projects (public and private) that have installed onsite, joint, and/or offsite stormwater

treatment systems. This database or equivalent tabular format shall include the following information for each Regulated Project:

- (a) Name and address of the Regulated Project;
 - (b) Specific description of the location (or a map showing the location) of the installed stormwater treatment system(s) and HM control(s) (if any);
 - (c) Date(s) that the treatment system(s) and HM controls (if any) is/are installed;
 - (d) Description of the type and size of the treatment system(s) and HM control(s) (if any) installed;
 - (e) Responsible operator(s) of each treatment system and HM control (if any);
 - (f) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and HM control(s) (if any) by the Permittee; and
 - (g) Any problems and corrective or enforcement actions taken.
- (6) A prioritized plan for inspecting all installed stormwater treatment systems and HM controls. At a minimum, this prioritized plan must specify the following for each fiscal year:
- (a) Inspection by the Permittee of all newly installed stormwater treatment systems and HM controls within 45 days of installation to ensure approved plans have been followed;
 - (b) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed stormwater treatment systems and HM controls;
 - (c) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed vault-based systems; and
 - (d) Inspection by the Permittee of all installed stormwater treatment systems subject to Provision C.3, at least once every five years.

iii. Maintenance Approvals: The Permittees shall ensure that onsite, joint, and offsite stormwater treatment systems and HM controls installed by Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a stormwater treatment system or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment system or HM control, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

Due Date for Full Implementation: Immediate for Provisions C.3.h.i, C.3.h.ii.(1), and C.3.h.iii, and December 1, 2010, for Provisions C.3.h.ii.(2)-(6). For Vallejo Permittees: December 1, 2010, for Provisions C.3.h.i-iii.

iv. Reporting: Beginning with the 2010 Annual Report

- (1) For each Regulated Project inspected during the reporting period (fiscal year) the following information shall be reported to the Water Board electronically in tabular form as part of the Annual Report (as set forth in the Provision C.3.h. Sample Reporting Table attached):
 - Name of facility/site inspected.
 - Location (street address) of facility/site inspected.
 - Name of responsible operator for installed stormwater treatment systems and HM controls.
 - For each inspection:
 - Date of inspection.
 - Type of inspection (e.g., initial, annual, follow-up, spot).
 - Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well, etc.) and an indication of whether the treatment system is an onsite, joint, or offsite system.
 - Type of HM controls inspected.
 - Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation, maintenance required immediately, etc.).
 - Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order).
- (2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the Water Board. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.
- (3) Each Permittee shall report the following information in the Annual Report each year:
 - (a) A discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.
 - (b) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

- i. **Task Description** – The Permittees shall require all development projects, which create and/or replace $\geq 2500 \text{ ft}^2$ to $< 10,000 \text{ ft}^2$ of impervious surface, and

detached single-family home projects,¹⁰ which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.³
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.³

This provision applies to all development projects that require approvals and/or permits issued under the Permittee's' planning, building, or other comparable authority.

- ii. **Implementation Level** – All elements of this task shall be fully implemented by December 1, 2012.
- iii. **Reporting** – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.
- iv. **Task Description** – The Permittees shall develop standard specifications for lot-scale site design and treatment measures (e.g., for roof runoff and paved areas) as a resource for single-family homes and small development projects.
- v. **Implementation Level** – This task may be fulfilled by the Permittees cooperating on a countywide or regional basis.

Due Date for Full Implementation – December 1, 2012.

- vi. **Reporting** – A report containing the standard specifications for lot-scale treatment BMPs shall be submitted by December 1, 2012.

¹⁰ **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites which could reasonably be considered to cause or contribute to pollution of stormwater runoff, with inspections and effective follow-up and enforcement to abate actual or potential pollution sources consistent with each Permittee's respective Enforcement Response Plan (ERP), to prevent discharge of pollutants and impacts on beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

- i.** Task Description – Permittees shall have sufficient legal enforcement authority to obtain effective stormwater pollutant control on industrial sites. Permittees shall have the ability to inspect and require effective stormwater pollutant control and to escalate progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.
- ii. Implementation Level**
 - (1) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites which may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial to address pollutant sources associated with outdoor process and manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, outdoor drainage from indoor areas, rooftop equipment, and contaminated and erodible surface areas, and other sources determined by the Permittees or Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.
 - (2) Permittees shall notify the discharger of any actual or potential pollutant sources and violations and require problem correction within a reasonably short and expedient time frame commensurate with the threat to water quality. Permittees shall require timely correction of problems involving rapid temporary repair, and may allow longer time periods for implementation of more permanent solutions, if these require significant capital expenditure or construction. Violations shall be corrected prior to the next rain event or within 10 business days after the violations are noted. If more than 10 business days are required for correction, a rationale shall be given in the tabulated sheets.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

- i. Task Description – Permittees shall develop and implement an inspection plan that will serve as a prioritized inspection workplan. This inspection plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee’s jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

The Inspection Plan shall contain the following information:

- (1) Total number and a list of industrial and commercial facilities requiring inspection, within each Permittee’s jurisdiction, to be determined on the basis of a prioritization criteria designed to assign a more frequent inspection schedule to the highest priority facilities per Section C.4.b.ii. below.
 - (2) A description of the process for prioritizing inspections and frequency of inspections. If any geographical areas are to be targeted for inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan. A mechanism to include newly opened businesses that warrant inspection shall be included.
- ii. Implementation Level – Each Permittee shall annually update and maintain a list of industrial and commercial facilities in the Inspection Plan to inspect that could reasonably be considered to cause or contribute to pollution of stormwater runoff. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plans:
 - (1) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:
 - (a) Outdoor process and manufacturing areas
 - (b) Outdoor material storage areas
 - (c) Outdoor waste storage and disposal areas
 - (d) Outdoor vehicle and equipment storage and maintenance areas
 - (e) Outdoor wash areas
 - (f) Outdoor drainage from indoor areas
 - (g) Rooftop equipment
 - (h) Other sources determined by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff
 - (2) The following types of Industrial and Commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges:
 - (a) Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the State General NPDES Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);

- (b) Vehicle Salvage yards;
 - (c) Metal and other recycled materials collection facilities, waste transfer facilities;
 - (d) Vehicle mechanical repair, maintenance, fueling, or cleaning;
 - (e) Building trades central facilities or yards, corporation yards;
 - (f) Nurseries and greenhouses;
 - (g) Building material retailers and storage;
 - (h) Plastic manufacturers; and
 - (i) Other facilities designated by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff.
- (3) **Prioritization of Facilities**
Facilities of the types described in Provision 4.b.ii.(2) above and identified by the Permittees as having the reasonable potential to contribute to pollution of stormwater runoff shall be prioritized on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a waterbody, violation history of the facility, and other relevant factors.
- (4) **Types/Contents of Inspections**
Each Permittee shall conduct inspections to determine compliance with its ordinances and this Permit. Inspections shall include but not be limited to the following:
- (a) Prevention of stormwater runoff pollution or illicit discharge by implementing appropriate BMPs;
 - (b) Visual observations for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater;
 - (c) Noncompliance with Permittee ordinances and other local requirements; and
 - (d) Verification of coverage under the Industrial General Permit, if applicable.
- (5) **Inspection Frequency** – Permittees shall establish appropriate inspection frequencies for facilities based on Provision 4.b.ii (3) priority, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.
- (6) **Record Keeping** – For each facility identified in Provision 4.b.ii, the Permittee shall maintain a database or equivalent of the following information at a minimum:
- (a) Name and address of the business and local business operator;
 - (b) A brief description of business activity including SIC code;
 - (c) Inspection priority and inspection frequency; and
 - (d) If coverage under the Industrial General Permit is required.

iii. Reporting – The Permittees shall include the following in the Annual Report:

- (1) The list of facilities identified in Provision 4.b.ii in the 2010 Annual Report and revisions or updates in subsequent annual reports; and
- (2) The list of facilities scheduled for inspection during the current fiscal year.

C.4.c. Enforcement Response Plan (ERP)

- i. Task Description – Permittees shall develop and implement an ERP that will serve as a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all commercial and industrial site operators.
- ii. Implementation Level – The ERP shall contain the following:
 - (1) **Required enforcement actions** – including timeframes for corrections of problems – for various field violation scenarios. The ERP will provide guidance on appropriate use of the various enforcement tools, such as verbal and written notices of violation, citations, cleanup requirements, administrative and criminal penalties.
 - (2) **Timely Correction of Violations** – All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

A description of the Permittee’s procedures for follow-up inspections and enforcement actions or referral to another agency, including appropriate time periods for each level of corrective action.
 - (3) **Referral and Coordination with Water Board** – Each Permittee shall enforce its stormwater ordinances as necessary to achieve compliance at sites with observed violations. For cases in which Permittee enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney or other relevant agencies for additional enforcement.
 - (4) **Recordkeeping** – Permittees shall maintain adequate records to demonstrate compliance and appropriate follow-up enforcement responses for facilities inspected.

Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial commercial site inspections:

 - (a) Name of Facility/Site Inspected
 - (b) Inspection Date
 - (c) Industrial General Permit coverage required (Yes or No)
 - (d) Compliance Status
 - (e) Type of Enforcement (if applicable)
 - (f) Type of Activity or Pollutant Source

Examples: Outdoor process/manufacturing areas, Outdoor material storage areas, Outdoor waste storage/disposal areas, outdoor vehicle and equipment storage/maintenance areas, Outdoor parking areas and access roads, Outdoor wash areas, Rooftop equipment, Outdoor drainage from indoor areas

- (g) Specific Problems
- (h) Problem Resolution
- (i) Additional Comments

The electronic database or equivalent tabular system shall be made readily available to the Executive Officer and during inspections and audits by the Water Board staff or its representatives.

- (5) The ERP shall be developed and implemented by April 1, 2010.

iii. Reporting – Permittees shall include the following information in each Annual Report:

- (1) Number of inspections conducted, Number of violations issued (excluding verbal warnings), Percentage of sites inspected in violation, and number and percent of violations resolved within 10 working days or otherwise deemed resolved in a longer but still timely manner;
- (2) Frequency and Types/categories of violations observed, Frequency and type of enforcement conducted;
- (3) Summary of types of violations noted by business category; and
- (4) Facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

C.4.d. Staff Training

i. Task Description

Permittees shall provide focused training for inspectors annually. Trainings may be Program-wide, Region-wide, or Permittee-specific.

ii. Implementation Level

At a minimum, train inspectors, within the 5-year term of this Permit, in the following topics:

- (1) Urban runoff pollution prevention;
- (2) Inspection procedures;
- (3) Illicit Discharge Detection, Elimination and follow-up; and
- (4) Implementation of typical BMPs at Industrial and Commercial Facilities.

Permittees, either countywide or regionally, if they have not already done so, are encouraged to create or adopt guidance for inspectors or reference existing inspector guidance including the California Association of Stormwater Quality Agencies (CASQA) Industrial BMP Handbook.

iii. Reporting

The Permittees shall include the following information in the Annual Report:

- (1) Dates of trainings;
- (2) Training topics that have been covered; and
- (3) Percentage of Permittee inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to ensure illicit discharges are detected and controlled that are not otherwise controlled under provision C4, Industrial and Commercial Site Controls and C6, Construction Site Controls. Permittees shall develop and implement an illicit discharge program that includes an active surveillance component and a centralized complaint collection and follow-up component to target illicit discharge and non-stormwater sources. Permittees shall maintain a complaint tracking and follow-up data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

- i. Task Description – Permittees shall have the legal authority to prohibit and control illicit discharges and escalate stricter enforcement to achieve expedient compliance.
- ii. **Implementation Level**
 - (1) Permittees shall have adequate legal authority to address stormwater and non-stormwater pollution associated with, but not limited to the following:
 - (a) Sewage;
 - (b) Discharges of wash water resulting from the cleaning of exterior surfaces and pavement, or the equipment and other facilities of any commercial business, or any other public or private facility;
 - (c) Discharges of runoff from material storage areas, including containing chemicals, fuels, or other potentially polluting or hazardous materials;
 - (d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
 - (e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and
 - (f) Discharges of food-related wastes (e.g., grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).
 - (2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to storm drains.
 - (3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to storm drains.

C.5.b. Enforcement Response Plan (ERP)

- i. Task Description – Permittees shall develop and implement an ERP that will serve as guidance for inspection staff to take consistent actions to achieve timely and effective abatement of illicit discharges.
- ii. Implementation Level – The ERP shall contain the following:

- (1) Recommended responses and enforcement actions – including timeframes for corrections of problems – for various types and degree of violations. The ERP shall provide guidelines on when to employ the range of regulatory responses from warnings, citations and cleanup and cost recovery, to administrative or criminal penalties.
- (2) Timely Correction of Violations: All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system. Immediate correction can be temporary and short-term if a long-term, permanent correction will involve significant resources and construction time. An example would be replumbing of a wash area to the sanitary sewer, which would involve an immediate short-term, temporary fix followed by permanent replumbing.
- (3) If corrective actions are not implemented promptly or if there are repeat violations, Permittees shall escalate responses as needed to achieve compliance, including referral to other agencies were necessary.
- (4) The ERP shall be developed and implemented by April 1, 2010.

C.5.c. Spill and Dumping Response, Complaint Response, and Frequency of Inspections

- i. Task Description – Permittees shall have a central contact point, including a phone number for complaints and spill reporting, and publicize this number to both internal Permittee staff and the public. If 911 is selected, also maintain and publicize a staffed, non-emergency phone number with voicemail, which is checked during normal business hours.

Permittees shall develop a spill/dumping response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittees immediate capabilities. The list shall be maintained and updated as changes occur.

Permittees shall conduct reactive inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented to achieve and maintain compliance.
- ii. Implementation Level – Permittees will have the phone number and contact information available and integrated into training and outreach both to Permittee staff and the public by July 1, 2010.
- iii. Reporting – Submit the complaint and spill response phone number and spill contact list with the 2010 Annual Report and update annually if changes occur.

C.5.d. Control of Mobile Sources

- i. Task Description – The purpose of this section is to establish oversight and control of pollutants associated with mobile business sources.

- ii. Implementation Level – Each Permittee shall develop and implement a program to reduce the discharge of pollutants from mobile businesses.
 - (1) The program shall include the following:
 - (a) Development and implementation of minimum standards and BMPs to be required for each of the various types of mobile businesses such as automobile washing, power washing, steam cleaning, and carpet cleaning. This guidance can be developed via county-wide or regional collaboration.
 - (b) Development and implementation of an enforcement strategy which specifically addresses the unique characteristics of mobile businesses.
 - (c) Outreach to mobile businesses operating within the Permittee’s jurisdiction with minimum standards and BMP requirements and local ordinances through an outreach and education strategy.
 - (d) Inspection of mobile businesses as needed.
 - (2) Permittees should cooperate regionally in developing and implementing their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education.
- iii. Reporting – Permittees shall report on implementation of minimum standards and BMPs for mobile business and their enforcement strategy in each Annual Report.

C.5.e. Collection System Screening - Municipal Separate Storm Sewer System (MS4) Map Availability

- i. Task Description – Permittees shall perform routine surveys for illicit discharges and illegal dumping in above ground check points in the collection system including elements that are typically inspected for other maintenance purposes, such as end of pipes, creeks, flood conveyances, storm drain inlets and catch basins, in coordination with public works/flood control maintenance surveys, video inspections of storm drains, and during other routine Permittee maintenance and inspection activities when Permittee staff are working in or near the MS4 system.
- ii. Implementation Level – Permittees shall develop and implement a screening program utilizing the USEPA/Center for Watershed Protection publication, “Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment.” Permittees shall implement the screening program by conducting a survey of strategic collection system check points (one screening point per square mile of Permittee urban and suburban jurisdiction area, less open space) including some key major outfalls draining industrial areas as defined in 40 CFR 122.26 (b)(5) once each year in dry weather conditions meaning no significant rainfall within the past 3 weeks. Routine surveys that occur on an ongoing basis during regular conveyance system inspections may be credited toward this requirement. Make maps of the MS4 publicly available, either electronically or in hard copy by July 1, 2010. The public availability shall be through a publicized single point of contact that

is convenient for the public, such as a staffed counter or web accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.

- iii. Reporting – Permittees shall provide a summary of their collection screening program, a summary of problems found during collection system screening, and any changes to the screening program in each Annual Report.

C.5.f. Tracking and Case Follow-up

- i. Task Description – All incidents or discharges reported to the complaint/spill system that might pose a threat to water quality shall be logged to track follow-up and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems, and inter/intra-agency coordination, where appropriate.
- ii. Implementation Level – Create and maintain a water quality spill and discharge complaint tracking and follow-up in an electronic database or equivalent tabular system by April 1, 2010.

The spill and discharge complaint tracking system shall contain the following information:

- (1) Complaint information:
 - (a) Date and time of complaint
 - (b) Type of pollutant
 - (c) Problem Status (potential or actual discharge.)
- (2) Investigation information:
 - (a) Date and time started
 - (b) Type of pollutant
 - (c) Entered storm drain and/or receiving water
 - (d) Date abated
 - (e) Type of enforcement (if applicable)
- (3) Response time (days)
 - (a) Call to investigation
 - (b) Investigation to abatement
 - (c) Call to abatement

The electronic database or equivalent tabular system shall be made available to Water Board staff as needed for review of enforcement response through problem resolution.

- iii. Reporting – Permittees shall provide the following information in the Annual Report:
 - (1) Number of discharges reported;
 - (2) Number of discharges reaching storm drains and/or receiving waters;
 - (3) Number and percentage of discharges resolved in a timely manner; and
 - (4) Summary of major types of discharges and complaints.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with follow-up and enforcement consistent with each Permittee's respective Enforcement Response Plan (ERP), to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers; and reporting shall demonstrate the effectiveness of this inspection and problem solution activity by the Permittees.

C.6.a. Legal Authority for Effective Site Management

- i. Task Description – Permittees shall have the ability to require effective stormwater pollutant controls, and escalate progressively stricter enforcement to achieve expedient compliance and clean up at all public and private construction sites.
- ii. **Implementation Level**
 - (1) Permittees shall have the legal authority to require at all construction sites year round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non storm water management through all phases of construction (including but not limited to site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.
 - (2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and clean up at all construction sites year round.
- iii. Reporting – Permittees shall certify adequacy of their respective legal authority in the 2010 Annual Report.

C.6.b. Enforcement Response Plan (ERP)

- i. Task Description – Permittees shall develop and implement an ERP that will serve as a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all public and private construction site owners/operators.
- ii. **Implementation Level**
 - (1) The ERP shall include required enforcement actions – including timeframes for corrections of problems – for various field violation scenarios. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

- (2) If site owners/operators do not implement appropriate corrective actions in a timely manner, or if violations repeat, Permittees shall take progressively stricter responses to achieve compliance. The ERP shall include the structure for progressively stricter responses and various violation scenarios that evoke progressively stricter responses.
- (3) The ERP shall be developed and implemented by April 1, 2010.

C.6.c. Best Management Practices Categories

- i. Task Description – Permittees shall require all construction sites to have site specific, and seasonally- and phase-appropriate, effective Best Management Practices (BMPs) in the following six categories:
 - Erosion Control
 - Run-on and Run-off Control
 - Sediment Control
 - Active Treatment Systems (as necessary)
 - Good Site Management
 - Non Stormwater Management.

These BMP categories are listed in State General NPDES Permit for Stormwater Discharges Associated with Construction Activities (hereinafter the Construction General Permit).

- ii. **Implementation Level**

The BMPs targeting specific pollutants within the six categories listed in C.6.c.i. shall be site specific. Site specific BMPs targeting specific pollutants from the six categories listed in C.6.c.i. can be a combination of BMPs from:

- California BMP Handbook, Construction, January 2003.
- Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, and addenda.
- California Regional Water Quality Control Board, San Francisco Bay Region, Erosion and Sediment Control Field Manual, 2002.
- New BMPs available since the release of these Handbooks.

C.6.d. Plan Approval Process

- i. Task Description – Permittees shall review erosion control plans for consistency with local requirements, appropriateness and adequacy of proposed BMPs for each site before issuance of grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for coverage under the Construction General Permit.
- ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

- (1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in C.6.c.i. are planned;
- (2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction General Permit; and
- (3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in C.6.c.i.; and Permittees shall require timely corrections of all actual and threatened violations of local ordinances observed.

ii. Implementation Level

(1) **Wet Season Notification**

By September 1st of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil to prepare for the upcoming wet season.

(2) **Frequency of Inspections**

Inspections shall be conducted monthly during the wet season¹¹ at the following sites:

- (a) All construction sites disturbing one or more acre of land; and
- (b) **High Priority Sites** – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:
 - (i) Soil erosion potential or soil type;
 - (ii) Site slope;
 - (iii) Project size and type;
 - (iv) Sensitivity or receiving waterbodies;
 - (v) Proximity to receiving waterbodies;
 - (vi) Non-stormwater discharges; and
 - (vii) Any other relevant factors as determined by the local agency or the Water Board.

¹¹ For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

(3) **Contents of Inspections**

Inspections shall focus on the adequacy and effectiveness of the site specific BMPs implemented for the six categories listed in C.6.c.i. Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

- (a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from C.6.d.ii.(1));
- (b) Assessment of the adequacy and effectiveness of the site specific BMPs implemented for the six categories listed in C.6.c.i.;
- (c) Visual observations for:
 - actual discharges of sediment and/or construction related materials into stormdrains and/or waterbodies.
 - evidence of sediment and/or construction related materials discharges into stormdrains and/or waterbodies.
 - illicit connections.
 - potential illicit connections.
- (d) Education on stormwater pollution prevention, as needed.

(4) **Tracking**

All inspections must be recorded on a written or electronic inspection form. Inspectors shall follow the ERP if a violation is noted and shall require timely corrections of all actual and threatened violations of local ordinances observed. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded on the inspection form.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available to the Executive Officer and during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

- (a) Site name;
- (b) Inspection date;
- (c) Weather during inspection;
- (d) Has there been rainfall with runoff since the last inspection?;
- (e) Enforcement Response Level (Use ERP);
- (f) Problem(s) observed using Illicit Discharge and the six BMP categories listed in C.6.c.i.;

- (g) Specific Problem(s) (List the specific problem(s) within the BMP categories);
- (h) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and
- (i) Comments, which shall include all Rationales for Longer Compliance Time, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

- (1) In each Annual Report, each Permittee shall summarize the following information:
 - (a) Total number of active sites disturbing less than one acre of soil requiring inspection;
 - (b) Total number of active sites disturbing 1 acre or more of soil;
 - (c) Total number of inspections conducted;
 - (d) Number and percentage¹² of violations in each of the six categories listed in C.6.c.i.;
 - (e) Number and percentage¹³ of each type of enforcement action taken as listed in each Permittee's ERP;
 - (f) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;
 - (g) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;
 - (h) Number and percentage¹⁴ of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered corrected in a timely, though longer period; and
 - (i) Number and percentage¹⁵ of violations not fully corrected 30 days after the violations are discovered.
- (2) In each Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in C.6.e.ii.(4) above. This evaluation shall include findings on the program's strength, comparison to previous years' results, as well as areas that need

¹² Percentage shall be calculated as number of violations in each category divided by total number of violations in all six categories.

¹³ Percentage shall be calculated as number of each type of enforcement action divided by the total number of enforcement actions.

¹⁴ Percentage shall be calculated as follows: number of violations fully corrected prior to the goal of the next rain event but no later than 10 business days after the violations are discovered divided by the total number of violations for the reporting year.

¹⁵ Percentage shall be calculated as follows: number of violations not fully corrected 30 days after the violations are discovered divided by the total number of violations for the reporting year.

more focused education for site owners, operators, and developers the following year.

- (3) The Executive Officer may require that the information recorded and tracked by C.6.e.ii.(4) be submitted electronically or in a tabular format. Permittees shall submit the information within 10-working days of the Executive Officer's requirement. Submittal of the information in tabular form for the reporting year is not required in each Annual Report but encouraged.

C.6.f. Staff Training

- i. Task Description – Permittees shall provide training or access to training for staff conducting construction stormwater inspections.
- ii. Implementation Level – Permittees shall provide training at least every other year to municipal staff responsible for conducting construction site stormwater inspections. Training topics will include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and ERP.
- iii. Reporting – Permittees shall include in each Annual Report the following information: training topics covered, dates of training, and the percentage of Permittees' inspectors attending each training. If no training in that year, so state.

C.7. Public Information and Outreach

Each Permittee shall increase the knowledge of the target audiences regarding the impacts of stormwater pollution on receiving water and potential solutions to mitigate the problems caused; change the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve various citizens in mitigating the impacts of stormwater pollution.

C.7.a. Storm Drain Inlet Marking

- i. Task Description** – Permittees shall mark and maintain at least 80 percent of municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as “No dumping, drains to Bay” or equivalent. At least 80% of municipally-maintained storm drain inlet markings shall be inspected and maintained at least once per 5-year permit term. For newly approved, privately maintained streets, Permittees shall require inlet marking by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings shall be verified prior to acceptance of the project.
- ii. Implementation Level**
 - (1) Inspect and maintain markings of at least 80 percent of municipality maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.
 - (2) Verify that newly developed streets are marked prior to acceptance of the project.
- iii. Reporting**
 - (1) In the 2013 Annual Report, each Permittee shall report prior years’ annual percentages of municipality maintained inlet markings inspected and maintained as legible with a no dumping message or equivalent.
 - (2) In the 2013 Annual Report, each Permittee shall report prior years’ annual number of projects accepted after inlet markings were verified.

C.7.b. Advertising Campaigns

- i. Task Description** – Permittees shall participate in or contribute to advertising campaigns on trash/litter in waterways and pesticides with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audience.
- ii. Implementation Level**
 - (1) Target a broad audience with two separate advertising campaigns, one focused on reducing trash/litter in waterways and one focused on reducing the impact of urban pesticides. The advertising campaigns may be coordinated regionally or county-wide.
 - (2) Permittees shall conduct a pre-campaign survey and a post-campaign survey to identify and quantify the audiences’ knowledge, trends, and

attitudes and/or practices; and to measure the overall population's awareness of the messages and behavior changes achieved by the two advertising campaigns. These surveys may be done regionally or county-wide.

iii. Reporting

- (1) In the Annual Report following the pre-campaign survey, each Permittee (or the Countywide Program, if the survey was done county-wide or regionally) shall provide a report of the survey completed, which at a minimum, shall include the following:
 - A summary of how the survey was implemented.
 - A copy of the survey.
 - A copy of the survey results.
 - An analysis of the survey results.
 - A discussion of the outreach strategies based on the survey results.
 - A discussion of the planned or future advertising campaigns to influence awareness and behavior changes regarding trash/litter and pesticides.
- (2) In the Annual Report following the post campaign survey, each Permittee (or the Countywide Program, if survey was done county-wide or regionally) shall provide a report of the survey completed, which at minimum shall include the information required in the pre-campaign report (C.7.b.iii.(1)) and the following:
 - A discussion of the campaigns.
 - A discussion of the measurable changes in awareness and behavior achieved.
 - An update of outreach strategies based on the survey results.

C.7.c. Media Relations – Use of Free Media

- i. Task Description – Permittees shall participate in or contribute to a media relations campaign. Maximize use of free media/media coverage with the objective of significantly increasing the overall awareness of stormwater pollution prevention messages and associated behavior change in target audiences, and to achieve public goals.
- ii. Implementation Level – Conduct a minimum of six pitches (e.g., press releases, public service announcements, and/or other means) per year at the county-wide program, regional, and/or local levels.
- iii. Reporting – In each Annual Report, each Permittee (or the Countywide Program, if the media relations campaign was done county-wide or regionally) shall include the details of each media pitch, such as the medium, date, and content of the pitch.

C.7.d. Stormwater Point of Contact

- i. Task Description – Permittees shall individually or collectively create and maintain a point of contact, e.g., phone number or website, to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives.
- ii. Implementation Level – Maintain and publicize one point of contact for information on stormwater issues. Permittees may combine this function with the complaint/spill contact required in C.5.
- iii. Reporting – In the 2010 Annual Report, each Permittee shall discuss how this point of contact is publicized and maintained. If any change occurs in this contact, report in subsequent annual report.

C.7.e. Public Outreach Events

- i. Task Description – Participate in and/or host events such as fairs, shows, workshops, (e.g., community events, street fairs, and farmers’ markets), to reach a broad spectrum of the community with both general and specific stormwater runoff pollution prevention messages. Pollution prevention messages shall include encouraging residents to (1) wash cars at commercial car washing facilities, (2) use minimal detergent when washing cars, and (3) divert the car washing runoff to landscaped area.
- ii. Implementation Level – Each Permittee shall annually participate and/or host the number of events according to its population, as shown in the table below:

Table 7.1 Public Outreach Events¹⁶

Permittee Population	Number of Outreach Events
< 10,000	2
10,001– 40,000	3
40,001 – 100,000	4
100,001 – 175,000	5
175,001 – 250,000	6
> 250,000	8
Non-population-based Permittees ¹⁷	6

Should a public outreach event contain significant citizen involvement elements, the Permittee may claim credit for both Public Outreach Events (C.7.e.) and Citizen Involvement Events (C.7.g.).

- iii. Reporting – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in and assess the effectiveness

¹⁶ Permittees may claim individual credits for all events in which their Countywide Program or BASMAA participates, supports, and/or hosts, which are publicized to reach the Permittees jurisdiction.

¹⁷ Alameda County Flood Control and Water Conservation District, Contra Costa Flood Control and Water Conservation District, Santa Clara Valley Water District, Vallejo Sanitation and Flood Control District, and Zone 7 of the Alameda County Flood Control and Water Conservation District

of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event survey results, quantity/volume materials cleaned up and comparisons to previous efforts).

C.7.f. Watershed Stewardship Collaborative Efforts

- i. Task Description – Permittees shall individually or collectively encourage and support watershed stewardship collaborative efforts of community groups such as the Contra Costa Watershed Forum, the Santa Clara Basin Watershed Management Initiative, “friends of creek” groups, and other organizations that benefit the health of the watershed such as the Bay-Friendly Landscaping and Gardening Coalition. If no such organizations exist, encourage and support development of grassroots watershed groups or engagement of an existing group, such as a neighborhood association, in watershed stewardship activities. Coordinate with existing groups to further stewardship efforts.
- ii. Implementation Level – Annually demonstrate effort.
- iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, describe the support given, state what efforts were undertaken and the results of these efforts, and provide an evaluation of the effectiveness of these efforts.

C.7.g. Citizen Involvement Events

- i. Task Description – Permittees shall individually or collectively, support citizen involvement events, which provide the opportunity for citizens to directly participate in water quality and aquatic habitat improvement, such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, service learning activities such as storm drain inlet marking, community riparian restoration activities, community grants, other participation and/or host volunteer activities.
- ii. Implementation Level – Each Permittee shall annually sponsor and/or host the number of citizen involvement events according to its population, as shown in the table below:

Table 7.2 Community Involvement Events¹⁸

Permittee Population	Number of Involvement Events
< 10,000	1
10,001 – 40,000	1
40,001 – 100,000	2
100,001 – 175,000	3
175,001 – 250,000	4
> 250,000	5
Non-population-based Permittees	2

¹⁸ Permittees can claim individual credit for all events sponsored or hosted by their Countywide Program or BASMAA, which are publicized to reach the Permittee’s jurisdiction.

Should a citizen involvement event contain significant public outreach elements, the Permittee may claim credit for both Citizen Involvement Events (C.7.g.) and Public Outreach Events (C.7.e.).

- iii. Reporting – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event survey results, number of inlets/creeks/shores/parks/and such adopted, quantity/volume materials cleaned up, data trends, and comparisons to previous efforts).

C.7.h. School-Age Children Outreach

- i. Task Description – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-age children (K through 12).
- ii. Implementation Level – Implement annually and demonstrate effectiveness of efforts through assessment.
- iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, spectrum of children reached, and methods used, and provide an evaluation of the effectiveness of these efforts.

C.7.i. Outreach to Municipal Officials

- i. Task Description – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.
- ii. Implementation Level – At least once per permit cycle, or more often.
- iii. Reporting – Permittees shall summarize efforts in the 2013 Annual Report.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

- i. **Regional Collaboration** – All Permittees shall comply with the monitoring requirements in C.8, however, Permittees may choose to comply with any requirement of this Provision through a collaborative effort to conduct or cause to be conducted the required monitoring in their jurisdictions. Where all or a majority of the Permittees collaborate to conduct water quality monitoring, this shall be considered a regional monitoring collaborative.

Where an existing collaborative body has initiated plans, before the adoption of this Permit, to conduct monitoring that would fulfill a requirement(s) of this Provision, but the monitoring would not meet this Provision's due date(s) by a year or less, the Permittees may request the Executive Officer adjust the due date(s) to synchronize with such efforts.

The types, quantities, and quality of data required within Provision C.8 establish the minimum level-of-effort that a regional monitoring collaborative must achieve. Provided these data types, quantities, and quality are obtained, a regional monitoring collaborative may develop its own sampling design. For Pollutants of Concern and Long-Term monitoring required under C.8.e, an alternative approach may be pursued by Permittees provided that: either similar data types, data quality, data quantity are collected with an equivalent level of effort described under C.8.e; or an equivalent level of monitoring effort is employed to answer the management information needs stated under C.8.e.

- ii. **Implementation Schedule** – Monitoring conducted through a regional monitoring collaborative shall commence data collection by October 2011. All other Permittee monitoring efforts shall commence data collection by October 2010. By July 1, 2010, each Permittee shall provide documentation to the Water Board, such as a written agreement, letter, or similar document that confirms whether the Permittee will conduct monitoring individually or through a regional monitoring collaborative.¹⁹
- iii. **Permittee Responsibilities** – A Permittee may comply with the requirements in Provision C.8 by performing the following:
 - (1) Contributing to its stormwater countywide program, as determined appropriate by the Permittee members, so that the stormwater countywide Program conducts monitoring on behalf of its members;
 - (2) Contributing to a regional collaborative effort;

¹⁹ This documentation will allow the Water Board to know when monitoring will commence for each Permittee. Permittees who commit to monitoring individually may join the regional monitoring collaborative at any time. Any Permittee who discontinues monitoring through the regional collaborative must commence complying with all requirements of Provision C.8 immediately.

- (3) Fulfilling monitoring requirements within its own jurisdictional boundaries; or
- (4) A combination of the previous options, so that all requirements are fulfilled.

iv. **Third-party Monitoring** – Permittees may choose to fulfill requirements of Provision C.8 using data collected by citizen monitors or other third-party organizations, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.h. Where an existing third-party organization has initiated plans to conduct monitoring that would fulfill a requirement(s) of this Provision, but the monitoring would not meet this Provision’s due date(s) by a year or less, the Permittees may request that the Executive Officer adjust the due date(s) to synchronize with such efforts.

C.8.b. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees’ jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions²⁰ such as:

- Are chemical concentrations in the Estuary potentially at levels of concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?
- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?
- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP), by contributing their fair-share financially on an annual basis.

C.8.c. Status Monitoring/Rotating Watersheds

- i. Status Monitoring is intended to answer these questions: Are water quality objectives, both numeric and narrative, being met in local receiving waters,

²⁰ These are the management questions approved by the Regional Monitoring Program’s Steering Committee on May 9, 2008, and stated at http://www.sfei/rmp/rmp_steering_meetings/rmp_steering_meeting_5_09_08/Item%2010a%20Attachment%201%20%20Draft%20RMP%20Management%20Questions%2005-02-08%20Annotated.pdf. While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

including creeks, rivers and tributaries? Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?

- ii. **Parameters and Methods** – Permittees shall conduct Status Monitoring using the parameters, methods, occurrences, durations, and minimum number of sampling sites as described in Table 8.1. Spring sampling shall be conducted during the April - June timeframe; dry weather sampling shall be conducted during the July - September timeframe. Minor variations of the parameters and methods may be allowed with Executive Officer concurrence.
- iii. **Frequency** – Permittees shall complete the Status Monitoring in Table 8.1 at the following frequencies:
 - Alameda Permittees – annually
 - Contra Costa Permittees – annually
 - Fairfield-Suisun Permittees – twice during the Permit term
 - San Mateo Permittees – annually
 - Santa Clara Permittees – annually
 - Vallejo Permittees – once during the Permit term

Table 8.1 Status Monitoring Elements

Status Monitoring Parameter	Sampling and/or Analytical Method ²¹	Minimum Sampling Occurrence ²²	Duration of Sampling	Minimum # Sample Sites to Monitor/Yr ²³ Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.
Biological Assessment ²⁴ (Includes Physical Habitat Assessment and General Water Quality Parameters ²⁵) Nutrients (total phosphorus, dissolved orthophosphate, total nitrogen, nitrate, ammonia, silica, chloride,	SWAMP Std Operating Procedure ^{26,27,28} for Biological Assessments & PHab; SWAMP	1/yr (Spring Sampling)	Grab sample	Spring 20 / 10 / 4	BMI metrics that indicate substantially degraded community as per Attachment H, Table H-1 For Nutrients: 20% of results in one waterbody exceed one or more water quality standard

²¹ Refers to field protocol, instrumentation and/or laboratory protocol.

²² Refers to the number of sampling events at a specific site in a given year.

²³ The number of sampling sites shown is based on the relative population in each Regional Stormwater Countywide Program and is listed in this order: Santa Clara & Alameda Countywide / Contra Costa & San Mateo Countywide / Vallejo & Fairfield-Suisun Programs.

²⁴ The same general location must be used to collect benthic community, sediment chemistry, and sediment toxicity samples. General Water Quality Parameters need not be collected twice, where it is collected by a multi-parameter probe at a subset of these sample sites (see next row of Table 8.1).

²⁵ Includes dissolved oxygen, temperature, conductivity, and pH.

²⁶ Ode, P.R. 2007. Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California, California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised (http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/phab_sopr6.pdf). Permittees may coordinate with Water Board staff to modify their sampling procedures if these referenced procedures change during the Permit term.

²⁷ Biological assessments shall include benthic macroinvertebrates and algae. Bioassessment sampling method shall be multihabitat reach-wide. Macroinvertebrates shall be identified according to the Standard Taxonomic Effort Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists, using the most current SWAMP approved method. Current methods are documented in (1) SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, 5-21-07, and (2) Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, 9-17-08. For algae, include mass (ash-free dry weight), chlorophyll a, diatom and soft algae taxonomy, and reachwide algal percent cover. Physical Habitat (PHab) Assessment shall include the SWAMP basic method plus 1) depth and pebble count + CPOM, 2) cobble embeddedness, 3) discharge measurements, and 4) in-stream habitat. Permittees may coordinate with Water Board staff to modify these sampling procedures if SWAMP procedures change during the Permit term.

²⁸ Algae shall be collected in a consistent timeframe as Regional SWAMP. For guidance on algae sampling and evaluation: Fetscher, A. and K. McLaughlin, May 16, 2008. Incorporating Bioassessment Using Freshwater Algae into California’s Surface Water Ambient Monitoring Program (SWAMP). Technical Report 563 and current SWAMP-approved updates to Standard Operating Procedures therein. Available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/563_periphyton_bioassessment.pdf.

Status Monitoring Parameter	Sampling and/or Analytical Method ²¹	Minimum Sampling Occurrence ²²	Duration of Sampling	Minimum # Sample Sites to Monitor/Yr ²³ Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.
dissolved organic carbon, suspended sediment concentration)	comparable methods for Nutrients				or established threshold
General Water Quality ²⁹	Multi-Parameter Probe	2/yr (Concurrent with bioassessment & during the Aug. - Sept. timeframe)	15-minute intervals for 1-2 weeks	3 / 2 / 1	20% of results in one waterbody exceed one or more water quality standard or established threshold
Chlorine (Free and Total)	USEPA Std. Method 4500 Cl F ³⁰	2/yr Spring & Dry Seasons	Grab sample	Spring 20 / 10 / 2 Dry 3 / 2 / 1	After immediate resampling, concentrations remain > 0.08 mg/L
Temperature	Digital Temperature Logger	60-minute intervals	60-minute intervals April through Sept.	8 / 4 / 1	20% of results in one waterbody exceed applicable temperature threshold ³¹
Toxicity – Water Column ³²	Applicable SWAMP Comparable Method	2/yr (1/Dry Season & 1 Storm Event)	Grab or composite sample	3 / 2 / 1	If toxicity results < 50% of control results, repeat sample. If 2nd sample yields < 50% of control results, proceed to C.8.d.i.

²⁹ Includes dissolved oxygen, temperature, conductivity, and pH.

³⁰ The method of analysis shall achieve a method detection limit at least as low as that achieved by the Amperometric Titration Method (4500-Cl from *Standard Methods for Examination of Water and Wastewater*, Edition 20).

³¹ If temperatures exceed applicable threshold (e.g., Maximum Weekly Average Temperature, Sullivan K., Martin, D.J., Cardwell, R.D., Toll, J.E., Duke, S. 2000. *An Analysis of the Effects of Temperature on Salmonids of the Pacific Northwest with Implications for Selecting Temperature Criteria, Sustainable Ecosystem Institute*) or spike with no obvious natural explanation observed.

³² US EPA three species toxicity tests: *Selenastrum* growth and *Ceriodaphnia* and *Pimephales* with lethal and sublethal endpoints. Also *Hyaella azteca* with lethal endpoint.

Status Monitoring Parameter	Sampling and/or Analytical Method ²¹	Minimum Sampling Occurrence ²²	Duration of Sampling	Minimum # Sample Sites to Monitor/Yr ²³ Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.
Toxicity– Bedded Sediment, Fine-grained ³³	Applicable SWAMP Comparable Method	1/yr	Grab sample	3 / 2 / 1 At fine-grained depositional area at bottom of watershed	See Attachment H, Table H-1
Pollutants – Bedded Sediment, ³⁴ fine- grained	Applicable SWAMP Comparable Method inc. grain size	1/yr	Grab sample	3 / 2 / 1 At fine-grained depositional area at bottom of watershed	See Attachment H, Table H-1
Pathogen Indicators ³⁵	U.S. EPA protocol ³⁶	1/yr (During Summer)	Follow U.S. EPA protocol	5 / 5 / * *Fairfield-Suisun & Vallejo Permittees: 3 sites twice in permit term	Exceedance of USEPA criteria
Stream Survey (stream walk & mapping) ³⁷	USA ³⁸ or equivalent	1 waterbody/yr	N/A	9 / 6 / 3 stream miles/year	N/A

³³ Bedded sediments should be fine-grain from depositional areas. Grain size and TOC must be reported. Coordinate with TMDL Provision requirements as applicable.

³⁴ Bedded sediments should be fine-grain from depositional areas. Grain size and TOC must be reported. Analytes shall include all of those reported in MacDonald et al. 2000 (including copper, nickel, mercury, PCBs, DDT, chlordane, dieldrin) as well as pyrethroids (see Table 8.4 for list of pyrethroids). Coordinate with TMDL Provision requirements as applicable. MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31.

³⁵ Includes fecal coliform and *E. Coli*.

³⁶ Rather than collecting samples over five separate days, Permittees may use Example #2, pg. 54, of USEPA's *Implementation Guidance for Ambient Water Quality Criteria for Bacteria*, March 2004 Final.

³⁷ The Stream Surveys need not be repeated on a watershed if a Stream Survey was completed on that waterbody within the previous five years. The number of stream miles to be surveyed in any given year may be less than that shown in Table 8-1 in order to avoid repeating surveys at areas surveyed during the previous five years.

³⁸ Center for Watershed Protection, Manual 10: *Unified Stream Assessment: A User's Manual*, February 2005.

- iv. **Locations** – For each sampling year (per C.8.c.iii.), Permittees shall select at least one waterbody to sample from the applicable list below. Locations shall be selected so that sampling is sufficient to characterize segments of the waterbody(s). For example, Permittees required to collect a larger number of samples should sample two or more waterbodies, so that each sampling effort represents a reasonable segment length and/or type. Samples shall be collected in reaches that receive urban stormwater discharges, except in possible infrequent instances where non-urban-impacted stream samples are needed for comparison³⁹. Waterbody selection shall be based on factors such as watershed area, land use, likelihood of urban runoff impacts, and existing monitoring data.

Table 8.2 Status Monitoring Locations – Waterbodies

SCVURPPP	ACCWP	CCCWP	SMCWPPP	FSUMRP	VALLEJO
Coyote Creek and tributaries	Arroyo Valle (below Livermore or lower)	Kirker Creek	San Pedro Creek and tributaries	Laurel Creek	Chabot Creek
Guadalupe River and tributaries	Arroyo Mocho	Mt. Diablo Creek	Pilarcitos Creek	Ledgewood Creek	Austin Creek & tributaries
San Tomas Creek and tributaries	Tassajara Creek	Walnut Creek and tributaries	Colma Creek		
Calabazas Creek	Alamo Creek	Rodeo Creek	San Bruno Creek and tributaries		
Permanente Creek and tributaries	Arroyo de la Laguna	Pinole Creek	Millbrae Creek and tributaries		
Stevens Creek and tributaries	Alameda Creek (at Fremont or below)	San Pablo Creek	Mills Creek and tributaries		
Matadero Creek and tributaries	San Lorenzo Creek & tribs	Alhambra Creek	Easton Creek and tributaries		
Adobe Creek	San Leandro Creek & tribs	Wildcat Creek	Sanchez Creek and tributaries		
Lower Penitencia Creek and tributaries	Oakland, Berkeley, or Albany Creeks		Burlingame Creek and tributaries		
Barron Creek			San Mateo Creek (below dam only)		
San Francisquito Creek & tributaries			Borel Creek & tributaries		
			Laurel Creek & tribs		
			Belmont Creek & tribs		
			Pulgas Creek & tribs		
			Cordilleras & tributaries		
			Redwood Creek & tribs		
			Atherton Creek & tribs		
			San Francisquito Creek and tributaries		

³⁹ Sampling efforts shall focus on stream reaches with urban stormwater system discharges. Sampling upstream of urban outfalls is not precluded where needed to meet sampling plan objectives.

- v. Status Monitoring Results – When Status Monitoring produces results such as those described in the final column of Table 8.1, Permittees shall conduct Monitoring Project(s) as described in C.8.d.i.

C.8.d. Monitoring Projects – Permittees shall conduct the Monitoring Projects listed below.

- i. **Stressor/Source Identification** – When Status results trigger a follow-up action as indicated in Table 8.1, Permittees shall take the following actions, as also required by Provision C.1. If the trigger stressor or source is already known, proceed directly to step 2. The first follow-up action shall be initiated as soon as possible, and no later than the second fiscal year after the sampling event that triggered the Monitoring Project.
 - (1) Conduct a site specific study (or non-site specific if the problem is widespread) in a stepwise process to identify and isolate the cause(s) of the trigger stressor/source. This study should follow guidance for Toxicity Reduction Evaluations (TRE)⁴⁰ or Toxicity Identification Evaluations (TIE).⁴¹ A TRE, as adapted for urban stormwater data, allows Permittees to use other sources of information (such as industrial facility stormwater monitoring reports) in attempting to determine the trigger cause, potentially eliminating the need for a TIE. If a TRE does not result in identification of the stressor/source, Permittees shall conduct a TIE.
 - (2) Identify and evaluate the effectiveness of options for controlling the cause(s) of the trigger stressor/source.
 - (3) Implement one or more controls.
 - (4) Confirm the reduction of the cause(s) of trigger stressor/source.
 - (5) Stressor/Source Identification Project Cap: Permittees who conduct this monitoring through a regional collaborative shall be required to initiate no more than ten Stressor/Source Identification projects during the Permit term in total, and at least two must be toxicity follow-ups, unless monitoring results do not indicate the presence of toxicity. If conducted through a stormwater countywide program, the Santa Clara and Alameda

⁴⁰ USEPA. August 1999. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*. EPA/833B-99/002. Office of Wastewater Management, Washington, D.C.

⁴¹ Select TIE methods from the following references after conferring with SWAMP personnel: For sediment: (1) Ho KT, Burgess R., Mount D, Norberg-King T, Hockett, RS. 2007. *Sediment toxicity identification evaluation: interstitial and whole methods for freshwater and marine sediments*. USEPA, Atlantic Ecology Division/Mid-Continental Ecology Division, Office of Research and Development, Narragansett, RI, or (2) Anderson, BS, Hunt, JW, Phillips, BM, Tjeerdema, RS. 2007. *Navigating the TMDL Process: Sediment Toxicity*. Final Report- 02-WSM-2. Water Environment Research Federation. 181 pp. For water column: (1) USEPA. 1991. *Methods for aquatic toxicity identification evaluations. Phase I Toxicity Characterization Procedures*. EPA 600/6-91/003. Office of Research and Development, Washington, DC., (2) USEPA. 1993. *Methods for aquatic toxicity identification evaluations. Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*. EPA 600/R-92/080. Office of Research and Development, Washington, DC., or (3) USEPA. 1996. *Marine Toxicity Identification Evaluation (TIE), Phase I Guidance Document*. EPA/600/R-95/054. Office of Research and Development, Washington, DC.

Permittees each shall be required to initiate no more than five (two for toxicity); the Contra Costa and San Mateo Permittees each shall be required to initiate no more than three (one for toxicity); and the Fairfield-Suisun and Vallejo Permittees each shall be required to initiate no more than one Stressor/Source Identification project(s) during the Permit term.

(6) As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed to do so by the Water Board.

ii. **BMP Effectiveness Investigation** – Investigate the effectiveness of one BMP for stormwater treatment or hydrograph modification control. Permittees who do this project through a regional collaborative are required to initiate no more than one BMP Effectiveness Investigation during the Permit term. If conducted through a stormwater countywide program, the Santa Clara, Alameda, Contra Costa, and San Mateo Permittees shall be required to initiate one BMP Effectiveness Investigation each, and the Fairfield-Suisun and Vallejo Permittees shall be exempt from this requirement. The BMP(s) used to fulfill requirements of C.3.b.iii., C.11.e. and C.12.e. may be used to fulfill this requirement, provided the BMP Effectiveness Investigation includes the range of pollutants generally found in urban runoff. The BMP Effectiveness Investigation will not trigger a Stressor/Source Identification Project. Data from this Monitoring Project need not be SWAMP-comparable.

iii. **Geomorphic Project** – This monitoring is intended to answer the questions: How and where can our creeks be restored or protected to cost-effectively reduce the impacts of pollutants, increased flow rates, and increased flow durations of urban runoff?

Permittees shall select a waterbody/reach, preferably one that contains significant fish and wildlife resources, and conduct one of the following projects within each county, except that only one such project must be completed within the collective Fairfield-Suisun and Vallejo Permittees' jurisdictions:

- (1) Gather geomorphic data to support the efforts of a local watershed partnership⁴² to improve creek conditions; or
- (2) Inventory locations for potential retrofit projects in which decentralized, landscape-based stormwater retention units can be installed; or
- (3) Conduct a geomorphic study which will help in development of regional curves which help estimate equilibrium channel conditions for different-sized drainages. Select a waterbody/reach that is not undergoing changing land use. Collect and report the following data:
 - Formally surveyed channel dimensions (profile), planform, and cross-sections. Cross-sections shall include the topmost floodplain terrace and

⁴² A list of local watershed partnerships may be obtained from Water Board staff.

be marked by a permanent, protruding (not flush with ground) monument.

- Contributing drainage area.
- Best available information on bankfull discharges and width and depth of channel formed by bankfull discharges.
- Best available information on average annual rainfall in the study area.

Permittees shall complete the selected geomorphic project so that project results are reported in the Integrated Monitoring Report (see Provision C.8.g.v).

C.8.e. Pollutants of Concern and Long-Term Trends Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of Pollutants of Concern to the Bay from local tributaries and urban runoff, assess progress toward achieving wasteload allocations (WLAs) for TMDLs and help resolve uncertainties associated with loading estimates for these pollutants. In particular, there are four priority management information needs toward which POC monitoring must be directed: 1) identifying which Bay tributaries (including stormwater conveyances) contribute most to Bay impairment from pollutants of concern; 2) quantifying annual loads or concentrations of pollutants of concern from tributaries to the Bay; 3) quantifying the decadal-scale loading or concentration trends of pollutants of concern from small tributaries to the Bay; and 4) quantifying the projected impacts of management actions (including control measures) on tributaries and identifying where these management actions should be implemented to have the greatest beneficial impact.

Permittees shall implement the following POC monitoring components or pursue an alternative approach that addresses each of the aforementioned management information needs. An alternative approach may be pursued by Permittees provided that: either similar data types, data quality, data quantity are collected with an equivalent level of effort described; or an equivalent level of monitoring effort is employed to answer the management information needs.

Long-Term monitoring is intended to assess long-term trends in pollutant concentrations and toxicity in receiving waters and sediment, in order to evaluate if stormwater discharges are causing or contributing to toxic impacts on aquatic life. Permittees shall implement the following Long-Term monitoring components or, following approval by the Executive Officer, an equivalent monitoring program.

- i. Pollutants of Concern Loads Monitoring Locations** – Permittees shall conduct Pollutants of Concern monitoring at stations listed below. Permittees may install these stations in two phases providing at least half of the stations are monitored in the water year beginning October 2010, and all the stations are monitored in the water year beginning October 2012. Upon approval by the Executive Officer, Permittees may use alternate POC monitoring locations.

- (1) Castro Valley Creek S3 at USGS gauging station in Castro Valley
- (2) Guadalupe River
- (3) Zone 4 Line A at Chabot Road in Hayward
- (4) Rheem Creek at Giant Road in Richmond
- (5) Walnut Creek at a downstream location
- (6) Calabazas Creek at Lakeside Drive in Sunnyvale, at border with Santa Clara
- (7) San Mateo Creek at downstream location
- (8) Laurel Creek at Laurie Meadows park, off Casanova Drive in City of San Mateo.

ii. **Long-Term Monitoring Locations** – Permittees shall conduct Long-Term monitoring at stations listed below. After conferring with the Regional SWAMP program, and upon approval by the Executive Officer, Permittees may use alternate Long-Term monitoring locations.

Table 8.3. Long-Term Monitoring Locations

Stormwater Countywide Program	Waterbody	Suggested Location
Alameda Permittees	Alameda Creek OR	East of Alvarado Blvd*
	Lower San Leandro Creek	Empire Road*
Contra Costa Permittees	Kirker Creek OR	Floodway*
	Walnut Creek	Concord Avenue*
Santa Clara Permittees	Guadalupe River OR	USGS Gaging Station 11169025*
	Coyote Creek	Montague*
San Mateo Permittees	San Mateo Creek	Gateway Park*

* SWAMP is scheduled to collect sediment toxicity and sediment chemistry samples annually at these stations during the month of June.

iii. **Parameters and Frequencies** – Permittees shall conduct Pollutants of Concern sampling pursuant to Table 8.4, Categories 1 and 2. In Table 8.4, Category 1 pollutants are those for which the Water Board has active water quality attainment strategies (WQAS), such as TMDL or site-specific objective projects. Category 2 pollutants are those for which WQAS are in development. The lower monitoring frequency for Category 2 pollutants is sufficient to develop preliminary loading estimates for these pollutants.

Permittees shall conduct Long-Term monitoring pursuant to Table 8.4, Category 3. SWAMP has scheduled collection of Category 3 data at the Long-Term monitoring locations stated in C.8.e.ii. As stated in Provision C.8.a.iv., Permittees may use SWAMP data to fulfill Category 3 sampling requirements.

iv. **Protocols** – At a minimum, sampling and analysis protocols shall be consistent with 40 CFR 122.21(g)(7)(ii).

- v. **Methods** – Methyl mercury samples shall be grab samples collected during storm events that produce rainfall of at least 0.10 inch, shall be frozen immediately upon collection, and shall be kept frozen during transport to the laboratory. All other Category 1 and 2 samples shall be wet weather flow-weighted composite samples, collected during storm events that produce rainfall of at least 0.10 inch. Sampled storms should be separated by 21 days of dry weather, but, at a minimum, sampled storms must have 72 hours of antecedent dry weather. Samples must include the first rise in the hydrograph. Category 3 monitoring data shall be SWAMP-comparable.

Table 8.4 Pollutants of Concern Loads & Long-Term Monitoring Elements

Category/Parameter	Sampling Years	Minimum Sampling Occurrence	Sampling Interval
Category 1 <ul style="list-style-type: none"> • Total and Dissolved Copper • Total Mercury⁴³ • Methyl Mercury • Total PCBs⁴⁴ • Suspended Sediments (SSC) • Total Organic Carbon • Toxicity – Water Column • Nitrate as N • Hardness 	Annually	Average of 4 wet weather events per year For methyl mercury only: average of 2 wet & 2 dry weather events per year	Flow-weighted composite For methyl mercury only: grab samples collected during the first rise in the hydrograph of a storm event.
Category 2 <ul style="list-style-type: none"> • Total and Dissolved Selenium • Total PBDEs (Polybrominated Diphenyl Ethers) • Total PAHs (Poly-Aromatic Hydrocarbons) • Chlordane • DDTs (Dichloro-Diphenyl-Trichloroethane) • Dieldrin • Nitrate as N • Pyrethroids - bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin • Carbaryl and fipronil • Total and Dissolved Phosphorus 	Oct. 2010 - 2011 water year and Oct. 2012 - 2013 water year	2 times per year	Flow-weighted composite
Category 3 Toxicity – Bedded Sediment, fine-grained ⁴⁵	Biennially, Coordinate	Once per year, during April-June,	Grab sample

⁴³ The monitoring type and frequency shown for mercury is not sufficient to determine progress toward achieving TMDL load allocations. Progress toward achieving load allocations will be accomplished by assessing loads avoided resulting from treatment, source control, and pollution prevention actions.

⁴⁴ The monitoring type and frequency shown for PCBs is not sufficient to determine progress toward achieving TMDL load allocations. Progress toward achieving load allocations will be accomplished by assessing loads avoided resulting from treatment, source control, and pollution prevention actions.

Category/Parameter	Sampling Years	Minimum Sampling Occurrence	Sampling Interval
Pollutants – Bedded Sediment, fine-grained	with SWAMP	coordinate with SWAMP	

- vi. **Sediment Delivery Estimate/Budget** – The objective of this monitoring is to develop a strong estimate of the amount of sediment entering the Bay from local tributaries and urban drainages. By July 1, 2011, Permittees shall develop a design for a robust sediment delivery estimate/sediment budget in local tributaries and urban drainages. Permittees shall implement the study by July 1, 2012.
- vii. **Emerging Pollutants** – Permittees shall develop a work plan and schedule for initial loading estimates and source analyses for emerging pollutants: endocrine-disrupting compounds, PFOS/PFAS (Perfluorooctane Sulfonates (PFOS), Perfluoroalkyl sulfonates (PFAS); these perfluorocompounds are related to Teflon products), and NP/NPEs (nonylphenols/nonylphenol esters —estrogen-like compounds). This work plan, which is to be implemented in the next Permit term, shall be submitted with the Integrated Monitoring Report (see Provision C.8.g.).

C.8.f. Citizen Monitoring and Participation

- i. Permittees shall encourage Citizen Monitoring.
- ii. In developing Monitoring Projects and evaluating Status & Trends data, Permittees shall make reasonable efforts to seek out citizen and stakeholder information and comment regarding waterbody function and quality.
- iii. Permittees shall demonstrate annually that they have encouraged citizen and stakeholder observations and reporting of waterbody conditions. Permittees shall report on these outreach efforts in the annual Urban Creeks Monitoring Report.

C.8.g. Reporting

- i. **Water Quality Standard Exceedence** – When data collected pursuant to C.8.a.-C.8.f. indicate that stormwater runoff or dry weather discharges are or may be causing or contributing to exceedance(s) of applicable water quality standards, including narrative standards, a discussion of possible pollutant sources shall be included in the Urban Creeks Monitoring Report. When data collected pursuant to C.8.a.-C.8.f. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a follow-up report in accordance with Provision C.1 requirements. The preceding reporting requirements shall not apply to

⁴⁵ If Ceriodaphnia, Hyalella azteca, or Pimephales survival or Selenastrum growth is < 50% of control results, repeat wet weather sample. If 2nd sample yields < 50% of control results, proceed to C.8.d.i.

continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.8 through C.14 of this Order in accordance with Provision C.1.

- ii. **Status Monitoring Electronic Reporting** – Permittees shall submit an Electronic Status Monitoring Data Report no later than January 15 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Electronic Status Monitoring Data Reports shall be in a format compatible with the SWAMP database.⁴⁶ Water Quality Objective exceedances shall be highlighted in the Report.
- iii. **Urban Creeks Monitoring Report** – Permittees shall submit a comprehensive Urban Creeks Monitoring Report no later than March 15 of each year, reporting on all data collected during the foregoing October 1–September 30 period, with the initial report due March 15, 2012, unless the Permittees choose to monitor through a regional collaborative, in which case the due date is March 15, 2013. Each Urban Creeks Monitoring Report shall contain summaries of Status, Long-Term, Monitoring Projects, and Pollutants of Concern Monitoring including, as appropriate, the following:
 - (1) Maps and descriptions of all monitoring locations;
 - (2) Data tables and graphical data summaries; Constituents that exceed applicable water quality standards shall be highlighted;
 - (3) For all data, a statement of the data quality;
 - (4) An analysis of the data, which shall include the following:
 - Calculations of biological metrics and physical habitat endpoints.
 - Comparison of biological metrics to:
 - Each other
 - Any applicable, available reference site(s)
 - Any applicable, available index of biotic integrity
 - Physical habitat endpoints.
 - Identification and analysis of any long-term trends in stormwater or receiving water quality.
 - (5) A discussion of the data for each monitoring program component, which shall:
 - Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, or the California Toxics Rule or other applicable water quality control plans.

⁴⁶ See <http://mpsl.mlml.calstate.edu/swdataformats.htm>. Permittees shall maintain an information management system that will support electronic transfer of data to the Regional Data Center of the *California Environmental Data Exchange Network (CEDEN)*, located within the San Francisco Estuary Institute.

- Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness.
- Identify and prioritize water quality problems.
- Identify potential sources of water quality problems.
- Describe follow-up actions.
- Evaluate the effectiveness of existing control measures.
- Identify management actions needed to address water quality problems.

iv. **Monitoring Project Reports** – Permittees shall report on the status of each ongoing Monitoring Project in each annual Urban Creeks Monitoring Report. In addition, Permittees shall submit stand-alone summary reports within six months of completing BMP Effectiveness and Geomorphic Projects; these reports shall include: a description of the project; map(s) of project locations; data tables and summaries; and discussion of results.

v. **Integrated Monitoring Report** – No later than March 15, 2014, Permittees shall prepare and submit an Integrated Monitoring Report through the regional collaborative monitoring effort on behalf of all participating Permittees, or on a countywide basis on behalf of participating Permittees, so that all monitoring conducted during the Permit term is reported.⁴⁷ This report shall be in lieu of the Annual Urban Creeks Monitoring Report due on March 15, 2014.

The report shall include, but not be limited to, a comprehensive analysis of all data collected pursuant to Provision C.8., and may include other pertinent studies. For Pollutants of Concern, the report shall include methods, data, calculations, load estimates, and source estimates for each Pollutant of Concern Monitoring parameter. The report shall include a budget summary for each monitoring requirement and recommendations for future monitoring. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit.

vi. **Standard Report Content** –All monitoring reports shall include the following:

- The purpose of the monitoring and briefly describe the study design rationale.
- Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data.
- Brief descriptions of sampling protocols and analytical methods.
- Sample location description, including waterbody name and segment and latitude and longitude coordinates.
- Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue).
- Concentrations detected, measurement units, and detection limits.

⁴⁷ Permittees who do not participate in the Regional Monitoring Group or in a stormwater countywide program must submit an individual Integrated Receiving Water Impacts Report.

- Assessment, analysis, and interpretation of the data for each monitoring program component.
 - Pollutant load and concentration at each mass emissions station.
 - A listing of volunteer and other non-Permittee entities whose data are included in the report.
 - Assessment of compliance with applicable water quality standards.
 - A signed certification statement.
- vii. **Data Accessibility** – Permittees shall make electronic reports available through a regional data center, and optionally through their web sites. Permittees shall notify stakeholders and members of the general public about the availability of electronic and paper monitoring reports through notices distributed through appropriate means, such as an electronic mailing list.

C.8.h. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPP)⁴⁸ for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent Standard Operating Procedures. A Regional Monitoring Collaborative may adapt the SWAMP QAPP for use in conducting monitoring in the San Francisco Bay Region, and may use such QAPP if acceptable to the Executive Officer.

⁴⁸ The current SWAMP QAPP at the time of Permit issuance is dated September 1, 2008, and is available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses their own and others' use of pesticides within their jurisdictions that pose a threat to water quality and that have the potential to enter the municipal conveyance system. This provision implements requirements of the TMDL for Diazinon and Pesticide related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. However, urban runoff management agencies (i.e., the Permittees) are not solely responsible for attaining the allocations because their authority to regulate pesticide use is constrained by federal and State law. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Pesticides of concern include: organophosphorous pesticides (chlorpyrifos, diazinon, and malathion); pyrethroids (bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin); carbamates (e.g., carbaryl); and fipronil. The Permittees may coordinate with BASMAA, the Urban Pesticide Pollution Prevention Project, the Urban Pesticide Committee, the Bay-Friendly Landscaping and Gardening Coalition, and other agencies and organizations in carrying out these activities.

C.9.a. Adopt an Integrated Pest Management (IPM) Policy or Ordinance

- i. **Task Description** – In their IPM policies or ordinances, the Permittees shall include provisions to minimize reliance on pesticides that threaten water quality and to require the use of IPM in municipal operations and on municipal property.
- ii. **Implementation Level** – If not already in place, the Permittees shall adopt IPM policies or ordinances no later than July 1, 2010.
- iii. **Reporting** – The Permittees shall submit a copy of their IPM ordinance(s) or policy(s) in their 2010 Annual Report.

C.9.b. Implement IPM Policy or Ordinance

- i. **Task Description** – The Permittees shall establish written standard operating procedures for pesticide use that ensure implementation of the IPM policy or ordinance and require municipal employees and contractors to adhere to the IPM standard operating procedures.
- ii. **Reporting**
 - (1) In their Annual Reports, the Permittees shall report on IPM implementation by showing trends in quantities and types of pesticide used, and suggest reasons for increases in use of pesticides that threaten water quality, specifically organophosphorous pesticides, pyrethroids, carbaryl, and fipronil.

- (2) The Permittees shall maintain pesticide application standard operating procedures and submit them upon request.

C.9.c. Train Municipal Employees

- i. **Task Description** – The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides that threaten water quality are trained in IPM practices and the Permittee’s IPM policy. This training may also include other training opportunities such as Bay-Friendly Landscape Maintenance Training & Qualification Program and EcoWise Certified.
- ii. **Reporting**
 - (1) In their Annual Reports, the Permittees shall report the percentage of municipal employees who apply pesticides who have received training in IPM policy and IPM standard operating procedures within the last three years.
 - (2) The Permittees shall submit training materials (e.g., course outline, date, attendees) upon request.

C.9.d. Require Contractors to Implement IPM

- i. **Task Description** – The Permittees shall hire IPM-certified contractors or include contract specifications requiring contractors to implement IPM no later than July 1, 2010.
- ii. **Reporting** – In their Annual Reports, the Permittees shall submit documentation to confirm compliance, such as the Permittee’s standard contract specification or copy of contractors’ certification(s).

C.9.e. Track and Participate in Relevant Regulatory Processes (may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project)

- i. **Task Description**
 - (1) The Permittees shall track USEPA pesticide evaluation and registration activities as they relate to surface water quality, and when necessary, encourage USEPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
 - (2) The Permittees shall track California Department of Pesticide Regulation (DPR) pesticide evaluation activities as they relate to surface water quality, and when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
 - (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and County Agricultural Commissioners in

ensuring that pesticide applications comply with water quality standards;
and

- (4) As appropriate, the Permittees shall submit comment letters on USEPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.

- ii. **Reporting** – In their Annual Reports, the Permittees who participate in a regional effort to comply with C.9.e. may reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected. All other Permittees shall list their specific participation efforts, information submitted, and how regulatory actions were affected.

C.9.f. Interface with County Agricultural Commissioners

- i. **Task Description** – The Permittees shall maintain regular communications with county agricultural commissioners (or other appropriate State and/or local agencies) to (1) get input and assistance on urban pest management practices and use of pesticides, (2) inform them of water quality issues related to pesticides, and (3) report violations of pesticide regulations (e.g., illegal handling) associated with stormwater management.
- ii. **Reporting** – In their Annual Reports, the Permittees shall summarize improper pesticide usage reported to county agricultural commissioners and report follow-up actions to correct violations.

C.9.g. Evaluate Implementation of Source Control Actions Relating to Pesticides

- i. **Task Description** – The Permittees shall evaluate the effectiveness of the control measures implemented, evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (Provision C.8.), and identify improvements to existing control measures and/or additional control measures, if needed, to attain targets with an implementation time schedule.
- ii. **Reporting** – In their 2013 Annual Reports, the Permittees shall report the evaluation results, and if needed, submit a plan to implement improved and/or new control measures.

C.9.h. Public Outreach (may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project or the Bay-Friendly Landscaping and Gardening Coalition).

- i. **Point of Purchase Outreach:** The Permittees shall:
 - (1) Conduct outreach to consumers at the point of purchase;
 - (2) Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and

- (3) Participate in and provide resources for the “Our Water, Our World” program or a functionally equivalent pesticide use reduction outreach program.
- ii. **Reporting** – In their Annual Reports, the Permittees who participate in a regional effort to comply with C.9.h.i. may reference a report that summarizes these actions. All other Permittees shall summarize activities completed and document any measurable awareness and behavior changes resulting from outreach.
- iii. **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural or landscape pest control and shall:
 - (1) Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control, including IPM;
 - (2) Incorporate IPM messages into general outreach;
 - (3) Provide information to residents about “Our Water, Our World” or functionally equivalent program;
 - (4) Provide information to residents about EcoWise Certified IPM certification in Structural Pest Management, or functionally equivalent certification program; and
 - (5) Coordinate with household hazardous-waste programs to facilitate appropriate pesticide waste disposal, conduct education and outreach, and promote appropriate disposal.
- iv. **Reporting** – In their 2013 Annual Reports, the Permittees who participate in a regional effort to comply with C.9.h.iii. may reference a report that summarizes these actions. All other Permittees shall document the effectiveness of their actions in their 2013 Annual Reports. This documentation may include percentages of residents hiring certified IPM providers and the change in this percentage.
- v. **Outreach to Pest Control Operators:** The Permittees shall conduct outreach to pest control operators (PCOs) and landscapers; Permittees are encouraged to work with DPR, county agricultural commissioners, UC-IPM, BASMAA, the Urban Pesticide Committee, the EcoWise Certified Program (or functionally equivalent certification program), the Bio-integral Resource Center and others to promote IPM to PCOs and landscapers.
- vi. **Reporting** – In each Annual Report, the Permittees who participate in a regional effort to comply with C.9.h.v. may reference a report that summarizes these actions. All other Permittees shall summarize how they reached PCOs and landscapers and reduced pesticide use.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below.

During this permit term, the Permittees shall develop and implement a Short-Term Trash Load Reduction Plan. This includes implementation of a mandatory minimum level of trash capture; cleanup and abatement progress on a mandatory minimum number of Trash Hot Spots; and implementation of other control measures and best management practices, such as trash reduction ordinances, to prevent or remove trash loads from MS4s to attain a 40% reduction in trash loads by July 1, 2014. The Permittees shall also develop and begin implementation of a Long-Term Trash Load Reduction Plan to attain a 70% reduction in trash loads from their MS4s by 2017 and 100% by 2022. Flood management agencies, which are non-population-based Permittees that do not have jurisdiction over urban watershed land, are not subject to these trash reduction requirements except for minimum full trash capture and Trash Hot Spot requirements, as specified in subsections C.10.a.iii and C.10.b below.

C.10.a. Short-Term Trash Load Reduction

- i. **Short-Term Trash Loading Reduction Plan** – Each Permittee shall submit a Short-Term Trash Load Reduction Plan, including an implementation schedule, to the Water Board by February 1, 2012. The Plan shall describe control measures and best management practices, including any trash reduction ordinances, that are currently being implemented and the current level of implementation and additional control measures and best management practices that will be implemented, and/or an increased level of implementation designed to attain a 40% trash load reduction from its MS4 by July 1, 2014.

The Short-Term Trash Load Reduction Plan shall account for required mandatory minimum Full Trash Capture devices called for in Provision C.10.a.iii and Trash Hot Spot Cleanup called for in Provision C.10.b.

- ii. **Baseline Trash Load and Trash Load Reduction Tracking Method** – Each Permittee, working collaboratively or individually, shall determine the baseline trash load from its MS4 to establish the basis for trash load reductions and submit the determined load level to the Water Board by February 1, 2012, along with documentation of methodology used to determine the load level. The submittal shall also include a description of the trash load reduction tracking method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels. The submittal shall account for the drainage areas of a Permittee's jurisdiction that are associated with the baseline trash load from its MS4, and the baseline trash load level per unit area by land use type and drainage area characteristics used to derive the total baseline trash load level for each Permittee.

In the determination of applicable areas that generate trash loads for inclusion in the Baseline Trash Load, the Permittees may propose areas for exclusion, with supporting documentation, which meet Discharge Prohibition A.2 and trash-

related Receiving Water Limitations. Documentation demonstrating no material trash presence or adverse impact may include data from the maintenance of existing trash capture devices, data from trash flux measurements in the MS4 and the water column of streams during wet weather, Trash Hot Spot assessments, and litter audits of street curb and gutter areas in high pedestrian traffic and high commercial activity areas.

If proposed areas for exclusion are commercial, industrial, or high density residential areas, or adjacent to schools or event venues, the Permittee shall collect and submit by February 1, 2013, an additional year of documentation to further support the basis for the exclusion. If the data continue to support the exclusion determination, further trash reduction actions are not required in these areas, unless the Water Board notifies the Permittee otherwise.

Each Permittee shall submit a progress report by February 1, 2011, that indicates whether it is determining its baseline trash load and trash load reduction method individually or collaboratively with other Permittees and a summary of the approach being used. The report shall also include the types and examples of documentation that will be used to propose exclusion areas, and the land use characteristics and estimated area of potentially excluded areas.

- iii. Minimum Full Trash Capture** – Except as excluded below, population-based Permittees shall install and maintain a mandatory minimum number of full trash capture devices by July 1, 2014, to treat runoff from an area equivalent to 30% of Retail/Wholesale Land⁴⁹ that drains to MS4s within their jurisdictions (see Table 10.1 in Attachment J). If the sum of the areas that generate trash loads determined pursuant to C.10.a.ii above is a smaller acreage than the required trash capture acreage, a population-based Permittee may reduce its minimum full trash capture requirement to the smaller acreage. A population-based Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2000, is exempt from this trash capture requirement. The minimum number of trash capture devices required to be installed and maintained by non-population-based Permittees is included in Attachment J.

All installed devices that meet the following full trash capture definition may be counted toward this requirement regardless of date of installation. A full capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour, storm in the sub-drainage area.

C.10.b. Trash Hot Spot Selection and Cleanup

Trash Hot Spots in receiving waters shall be cleaned annually to achieve the multiple benefits of beginning abatement of these impacts as mitigation and to learn more about the sources and patterns of trash loading.

⁴⁹ [<http://quake.abag.ca.gov/mitigation/pickdbh2.html>] and Association of Bay Area Governments, 2005 ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

- i. **Hot Spot Cleanup and Definition** – The Permittees shall cleanup selected Trash Hot Spots to a level of “no visual impact” at least one time per year for the term of the permit. Trash Hot Spots shall be at least 100 yards of creek length or 200 yards of shoreline length.
- ii. **Hot Spot Selection** – Population-based Permittees shall identify high trash-impacted locations on State waters totaling at least one Trash Hot Spot per 30,000 population, or one per 100 acres of Retail/Wholesale Commercial Land Area, within their jurisdictions based on Association of Bay Area Governments (ABAG) 2005 data¹, whichever is greater. If the hot spot number by one of the two determination methods is more than twice that determined by the other method, double the smaller hot spot number shall be used. Otherwise, the larger hot spot number determined by the two methods shall be the Trash Hot Spot assignment for a population-based Permittee. Each population-based Permittee shall select at least one Trash Hot Spot. The Permittees shall each submit selected Trash Hot Spots to the Water Board by July 1, 2010. The list should include photo documentation (one photo per 50 feet) and initial assessment results for the proposed hot spots. The minimum number of Trash Hot Spots per Permittee is included in Attachment J for population and non-population-based Permittees. The Permittees shall proceed with cleanup of selected Trash Hot Spots unless informed otherwise by the Water Board.
- iii. **Hot Spot Assessments** – The Permittees shall quantify the volume of material removed from each Trash Hot Spot cleanup, and identify the dominant types of trash (e.g., glass, plastics, paper) removed and their sources to the extent possible. Documentation shall include the trash condition before and after clean up of the entire hot spot using photo documentation with a minimum of one photo per 50 feet of hot spot length. Trash Hot Spots may also be assessed using either the Rapid Trash Assessment (RTA v.8) or the SCVURPPP Urban RTA variation of that method.

C.10.c. Long-Term Trash Load Reduction

Each Permittee shall submit a Long-Term Trash Load Reduction Plan, including an implementation schedule, to the Water Board by February 1, 2014. The Plan shall describe control measures and best management practices, including any trash reduction ordinances, that are being implemented and the level of implementation and additional control measures and best management practices that will be implemented, and/or an increased level of implementation designed to attain a 70% trash load reduction from its MS4 by July 1, 2017, and 100% by July 1, 2022.

C.10.d. Reporting

- i. In each Annual Report, each Permittee shall provide a summary of its trash load reduction actions (control measures and best management practices) including the types of actions and levels of implementation, the total trash loads and dominant types of trash removed by its actions, and the total trash loads and dominant types of trash for each type of action. The latter shall include each Trash Hot Spot selected pursuant to C.10.b. Beginning with the 2012 Annual

Report, each Permittee shall also report its percent annual trash load reduction relative to its Baseline Trash Load.

- ii. The Permittees shall retain records for review providing supporting documentation of trash load reduction actions and the volume and dominant type of trash removed from full trash capture devices, from each Trash Hot Spot cleanup, and from additional control measures or best management practices implemented. Data may be combined for specific types of full trash capture devices deployed in the same drainage area. These records shall have the specificity required for the trash load reduction tracking method established pursuant to subsection C.10.a.iii.

C.11. Mercury Controls

The Permittees shall implement the following control programs for mercury. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay mercury TMDL and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocation established for the TMDL. The aggregate, regionwide, urban runoff wasteload load allocation is 82 kg/yr. This allocation should be achieved by February 2028 and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved by February 2018. If the interim loading milestone is not achieved, the Permittees shall demonstrate reasonable and measurable progress toward achieving the milestone. The Permittees may comply with any requirement of this provision through a collaborative effort.

C.11.a. Mercury Collection and Recycling Implemented throughout the Region

- i. Task Description** – The Permittees shall promote, facilitate, and/or participate in collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs).
- ii. Reporting** – The Permittees shall report on these efforts in their Annual Report, including an estimate of the mass of mercury collected.

C.11.b. Monitor Methylmercury

- i. Task Description** – The Permittees shall monitor methylmercury in runoff discharges. The objective of the monitoring is to investigate a representative set of drainages and obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations.
- ii. Implementation Level** – The Permittees shall analyze aqueous grab samples already being collected for total mercury analysis for methylmercury as specified in Provision C.8.f.
- iii. Reporting** – The Permittees shall report monitoring results annually beginning with their 2010 Annual Report.

C.11.c. Pilot Projects To Investigate and Abate Mercury Sources in Drainages, Including Public Rights-Of-Way, and Stormwater Conveyances with Accumulated Sediment that Contains Elevated Mercury Concentrations.

- i. Task Description** – The Permittees shall investigate and abate mercury sources in or to their storm drain systems in conjunction with the Water Board and other appropriate regulatory agencies with investigation and cleanup authorities. The purpose of this task is to implement and evaluate the benefit of a suite of abatement measures at five pilot project locations. The Permittees shall document the knowledge and experience gained through pilot implementation,

and this documentation will provide a basis for determining the scope of abatement implementation in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads abated resulting from implementation of these measures.

- ii. **Implementation Level** – Reducing loads of PCBs is the main pilot location selection factor for this Provision, and reducing loads of mercury is a secondary criterion. Accordingly, for PCB pilot project locations selected as part of Provision C.12.c, the Permittees shall conduct reconnaissance in the pilot project drainage areas. The Permittees shall test sediments in storm drains and conveyances to characterize the extent and magnitude of mercury concentrations. They shall evaluate monitoring data and determine if a mercury sediment abatement program would reduce mercury loading significantly. If so determined, the Permittees shall cause abatement activities to be conducted at those sites under Permittee jurisdiction with identified remedial activities. When contamination is located on private property, a Permittee must either exercise direct authority to require cleanup or notify and request other appropriate authorities to exercise their cleanup authority.
- iii. **Reporting** – Report on mercury-related aspects of work and loads abated as part of reporting requirements for Provision C.12.c.

C.11.d. Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices

- i. **Task Description** – The Permittees shall jointly evaluate ways to enhance mercury load reduction benefits of operation and maintenance activities that remove or manage sediment. The purpose of this task is to implement these management practices at the pilot scale in five drainages during this permit term. The knowledge and experience gained through pilot implementation will be used to determine the implementation scope of enhanced sediment removal and management practices in subsequent permit terms. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of enhanced sediment removal management practices in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.
- ii. **Implementation Level** – In all pilot program drainages selected as part of Provision C.12.c, the Permittees shall jointly evaluate ways to enhance existing sediment removal and management practices such as municipal street sweeping, curb clearing parking restrictions, inlet cleaning, catch basin cleaning, stream and stormwater conveyance system maintenance, and pump station cleaning via increased effort and/or retrofits for the control of mercury. This evaluation shall also include consideration of street flushing and capture, collection, or routing to the sanitary sewer (in coordination and consultation with local sanitary sewer agencies) as a potential enhanced management practice in coordination and consultation with local sanitary sewer agencies.

Beginning July 1, 2011, the Permittees shall implement pilot studies for the most potentially effective measures(s) based on the evaluation of Provision C.11.d.ii in all drainages for which PCB pilot projects are being conducted.

iii. Reporting

- (1) The Permittees shall present a progress report on the results of the evaluation in their 2010 Annual Report and the final evaluation results in their 2011 Annual Report.
- (2) In their March 15, 2014 Integrated Monitoring Report, the Permittees shall report the effectiveness of enhanced practices pilot implementation, report estimates of loads reduced, and present a plan and schedule for possible expanded implementation for subsequent permit terms.

C.11.e. Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit

- i. Task Description – The Permittees shall evaluate and quantify the removal of mercury by on-site treatment systems via retrofit of such systems into existing storm drain systems. The purpose of this task is to implement on-site treatment projects at the pilot scale in ten locations during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of on-site treatment retrofits in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.
- ii. Implementation Level – The Permittees, working collaboratively, shall identify at least ten locations throughout the Permittees’ jurisdictions that present opportunities to install and evaluate⁵⁰ on-site treatment systems (e.g., detention basins, bioretention units, sand filters, infiltration basins, treatment wetlands) and shall assess best treatment options for those locations. Every county (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano) should have at least one location. This effort shall identify potential locations draining a variety of land uses; evaluate technical feasibility; and discuss economical feasibility. The pilot locations may be the same as those chosen for Provision C.12.e, but consideration should be given to areas of elevated mercury concentrations.

On the basis of the Provision C.11.e.ii report, the Permittees shall select sites to perform pilot studies and shall conduct pilot studies in ten selected locations. Pilot studies shall span treatment types and drainage characteristics.

iii. Reporting –

- (1) In their 2011 Annual Report, the Permittees shall report on candidate locations and types of treatment retrofit for each location. The report shall include assessment of at least ten locations.

⁵⁰ Permittees may evaluate a maximum of two pre-existing treatment systems of the ten total required systems to be evaluated provided that these existing treatment systems are applicable to the intent of this provision..

- (2) In their March 15, 2014 Integrated Monitoring Report, the Permittees shall report status, results, mercury removal effectiveness, and lessons learned from the ten pilot studies and their plan for implementing this type of treatment on an expanded basis throughout their jurisdictions during the next permit term.

C.11.f. Diversion of Dry Weather and First Flush Flows to Publicly Owned Treatment Works (POTWs)

- i. **Task Description** – The Permittees shall evaluate the reduced loads of mercury from diversion of dry weather and first flush stormwater flows to sanitary sewers. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of urban runoff diversion projects in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.
- ii. **Implementation Level** – The Permittees shall implement pilot projects to divert dry weather and first flush flows to POTWs to address these flows as a source of PCBs and mercury to receiving waters. The Permittees are strongly encouraged to make use of stormwater pump stations in this effort because pump station characterization work performed pursuant to Provisions C.2 and C.10, addressing dissolved oxygen depletion and trash impacts, may be efficiently leveraged for the initial phase of these diversion pilot projects. The objectives of this Provision are to: implement five pilot projects for urban runoff diversion from stormwater pump stations to POTWs; evaluate the reduced loads of mercury and PCBs resulting from each diversion; and gather information to guide the selection of additional diversion projects in future permits. Collectively, the Permittees shall select five stormwater pump stations and five alternates by evaluating drainage characteristics and the feasibility of diverting flows to the sanitary sewer.
 - (1) The Permittees should work with local POTWs on a watershed, county, or regional level to evaluate feasibility and to establish cost sharing agreements. The feasibility evaluation shall include, but not be limited to, costs, benefits, and impacts on the stormwater and wastewater agencies and the receiving waters relevant to the diversion and treatment of the dry weather and first flush flows.
 - (2) From this feasibility evaluation, the Permittees shall select five pump stations and five alternates for pilot diversion studies. At least one urban runoff diversion pilot project shall be implemented in each of the five counties (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano). The pilot and alternate locations should be located in industrially-dominated catchments where elevated PCB concentrations are documented.

- (3) The Permittees shall implement flow diversion to the sanitary sewer at five pilot pump stations. As part of the pilot studies, the Permittees shall monitor, measure, and report mercury load reduction.

iii. Reporting

- (1) The Permittees shall summarize the results of the feasibility evaluation in their 2010 Annual Report, including:
 - Selection criteria leading to the identification of the five candidate and five alternate pump stations for pilot studies.
 - Time schedules for conducting the pilot studies.
 - A proposed method for distributing mercury load reductions to participating wastewater and stormwater agencies.
- (2) The Permittees shall report annually on the status of the pilot studies in each subsequent Annual Report.
- (3) The Permittees shall include in their March 15, 2014 Integrated Monitoring Report:
 - Evaluation of pilot program effectiveness.
 - Mercury loads reduced.
 - Updated feasibility evaluation procedures to guide future diversion project selection.

C.11.g. Monitor Stormwater Mercury Pollutant Loads and Loads Reduced

- i. **Task Description** – The Permittees shall develop and implement a monitoring program to quantify mercury loads and loads reduced through source control, treatment and other management measures as required in Provision C.8.f.
- ii. **Implementation Level** – The Permittees shall demonstrate progress toward (a) the interim loading milestones, or (b) attainment of the program area allocations, by using the following methods:
 - (1) Quantify through estimates the annual average mercury load reduced by implementing pollution prevention, source control and treatment control efforts required by the provisions of this permit or other relevant efforts; or
 - (2) Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations; or
 - (3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the target of 0.2 mg mercury/kg dry weight.

iii. Reporting

- (1) The Permittees shall report in their 2010 Annual Report methods used to assess progress toward meeting WLA goals and a full description of the

measurement and estimation methodology and rationale for the approaches.

- (2) The Permittees shall report in their March 15, 2014 Integrated Monitoring Report results of chosen monitoring/measurement approach concerning loads assessment and estimation of loads reduced.

C.11.h. Fate and Transport Study of Mercury in Urban Runoff

- i. **Task Description** – The Permittees shall conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of mercury discharged in urban runoff to San Francisco Bay and tidal areas.
- ii. **Implementation Level** – The specific information needs include understanding the in-Bay transport of mercury discharged in urban runoff, the influence of urban runoff on the patterns of food web mercury accumulation, and the identification of drainages where urban runoff mercury is particularly important in food web accumulation.
- iii. **Reporting** – The Permittees shall submit in their 2010 Annual Report a work plan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a schedule. The Permittees shall report on status of these studies in their 2010, 2011, and 2012 Annual Reports. In the March 15, 2014 Integrated Monitoring Report, the Permittees shall report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.11.i. Development of a Risk Reduction Program Implemented Throughout the Region.

- i. **Task Description** – The Permittees shall develop and implement or participate in effective programs to reduce mercury-related risks to humans and quantify the resulting risk reductions from these activities.
- ii. **Implementation Level** – The risk reduction activities shall include investigating ways to address public health impacts of mercury in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of health impacts to those people and communities most likely to be affected by mercury in San Francisco Bay-caught fish, such as subsistence fishers and their families. Such strategies should include public participation in developing effective programs in order to ensure their effectiveness. The Permittees may include studies needed to establish effective exposure reduction activities and risk communication messages as part of their planning. The risk reduction activities may be performed by a third party if the Permittees wish to provide funding for this purpose. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts.

- iii. **Reporting** – The Permittees shall submit in their 2010 Annual Report the specific manner in which these risk reduction activities will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report on the status of the risk reduction efforts in their 2011 and 2012 Annual Reports. The Permittees shall report the findings and results of the studies completed, planned, or in progress as well as the status of other risk reduction actions in their March 15, 2014 Integrated Monitoring Report.

C.11.j. Develop Allocation Sharing Scheme with Caltrans.

- i. **Task Description** – The wasteload allocations for urban stormwater developed through the San Francisco Bay mercury TMDL implicitly include California Department of Transportation (Caltrans) roadway and non-roadway facilities within the geographic boundaries of urban runoff management agencies. Consistent with the TMDL, the Permittees are required to develop an equitable mercury allocation-sharing scheme in consultation with Caltrans to address the Caltrans facilities in the program area, and report the details to the Water Board. Alternatively, Caltrans may choose to implement mercury load reduction actions on a watershed or regionwide basis in lieu of sharing a portion of an urban runoff management agencies' mercury allocation. In such a case, the Water Board will consider a separate allocation for Caltrans for which it may demonstrate progress toward attaining an allocation or load reduction in the same manner as municipal programs.
- ii. **Reporting** – The Permittees shall report on the status of the efforts to develop this allocation sharing scheme in their 2010, 2011, and 2012 Annual Reports. The Permittees shall submit in their March 15, 2014 Integrated Monitoring Report the manner in which the urban runoff mercury TMDL allocation will be shared between the Permittees and Caltrans.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control programs for PCBs. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation. The Permittees may comply with any requirement of this Provision through a collaborative effort.

C.12.a. Implement Project throughout Region to Incorporate PCBs and PCB-Containing Equipment Identification into Existing Industrial Inspections

- i. Task Description** – The Permittees shall develop training materials and train municipal industrial building inspectors to identify, in the course of their existing inspections, PCBs or PCB-containing equipment. The Permittees shall incorporate such PCB identification into industrial inspection programs.
- ii. Implementation Level** – Where inspectors identify during inspections PCBs or PCB-containing equipment, the Permittees shall document incidents in inspection reports and refer to appropriate regulatory agencies (e.g. county health departments, Department of Toxic Substances Control, California Department of Public Health, and the Water Board) as necessary.
- iii. Reporting** – The Permittees shall report the results of training in their 2010 Annual Report and report on both ongoing training development and inspections for PCB identification in their 2011, and following, Annual Reports.

C.12.b. Conduct Pilot Projects to Evaluate Managing PCB-Containing Materials and Wastes during Building Demolition and Renovation (e.g., Window Replacement) Activities

- i. Task Description** – The Permittees shall evaluate potential presence of PCBs at construction sites, current material handling and disposal regulations/programs (e.g., municipal ordinances, RCRA, TSCA) and current level of implementation.
- ii. Implementation Level** –
 - (1) The Permittees shall develop a sampling and analysis plan to evaluate PCBs at construction sites that involve demolition activities (including research on when, where, and which materials potentially contained PCBs).
 - (2) The Permittees shall implement a sampling and analysis plan at a minimum of 10 sites distributed throughout the combined Permittees' jurisdiction areas.
 - (3) The Permittees shall develop/select BMPs to reduce or prevent discharges of PCBs during demolition/remodeling. The BMPs will focus on methods

to identify, handle, contain, transport and dispose of PCB-containing building materials.

- (4) The Permittees shall develop model ordinances or policies, train and deploy inspectors, and pilot test BMPs at 5 sites.

iii. Reporting –

- (1) In their 2010 Annual Report, the Permittees shall submit the sampling and analysis plan (of Provision C.12.b.ii.).
- (2) In their 2010 Annual Report, the Permittees shall submit a status report on sampling and analysis along with whatever sampling results are available.
- (3) In their 2011 Annual Report, the Permittees shall submit the results of the evaluation (Provision C.12.b.i.) of current regulations, level of implementation, and regulatory gaps as well as the final sampling and analysis report, a list of appropriate BMPs, BMP training program, and model ordinances and policies to prevent PCB discharges from building demolition and improvement activities.
- (4) In the March 15, 2014 Integrated Monitoring Report, the Permittees shall submit the results of pilot program effectiveness evaluation.

C.12.c. Pilot Projects to Investigate and Abate On-land Locations with Elevated PCB Concentrations, Including Public Rights-of-way, and Stormwater Conveyances with Accumulated Sediments with Elevated PCBs Concentrations.

- i. **Task Description –** The Permittees shall investigate and abate PCBs sources in or to their storm drain systems in conjunction with the Water Board and other appropriate regulatory agencies with investigation and cleanup authorities. The purpose of this task is to implement and evaluate the benefit of a suite of abatement measures at five pilot project locations. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of abatement projects in subsequent permit terms. The Permittees shall also quantify and report the amount of PCBs loads abated resulting from implementation of these measures.

ii. Implementation Level –

- (1) The Permittees, working collaboratively, shall identify 5 drainage areas that contain high levels of PCBs and conduct pilot projects to investigate and abate these high PCB concentrations. To accomplish this, the Permittees shall interview municipal staff and review municipal databases, data collected or compiled through grant-funded efforts, other agency files, and other available information to identify potential PCB source areas and areas where PCB-contaminated sediment accumulates, including within stormwater conveyances. The Permittees shall qualitatively rank and map potential PCB source areas within each drainage. Investigation of mercury (Provision C.11.c.) shall be included in these efforts unless not

appropriate. When contamination is located on private property, the Permittees must either exercise direct authority to require cleanup or notify and request other appropriate authorities to exercise their cleanup authority.

- (2) The Permittees shall conduct reconnaissance surveys of the identified drainages and gather information concerning past or current use of PCBs to further identify potential source areas and determine whether runoff from such locations is likely to convey soils/sediments with PCBs to municipal stormwater conveyances.
- (3) The Permittees shall validate existence of elevated PCB concentrations through surface soil/sediment sampling and analysis where visual inspections and/or other information suggest potential source areas within each drainage.

Where data confirm significantly elevated PCB concentrations in surface soils/sediments within the subject pilot drainage, the Permittees shall provide available information on current site conditions and owner/operators and other potentially responsible parties to Water Board and other appropriate regulatory agencies to facilitate their issuance of orders for further investigation and remediation of subject sites. The Permittees shall assist the Water Board and other appropriate agencies to identify/evaluate funding to perform abatement and/or responsible parties and abatement options.

- (4) The Permittees shall identify areas for expedited abatement on the basis of loading potential including factors such as PCB concentration, mass of sediment, and mobilization potential and/or human health protection thresholds, such as California Human Health Screening Levels.
- (5) The Permittees shall conduct an abatement program in portions of drainages under their jurisdiction in conjunction with the Water Board and other appropriate agencies.

iii. Reporting

- (1) The Permittees shall report on the identified suspect drainage areas [Provision C.12.c.ii (1)] in their 2010 Annual Report and results of the surveys [Provision C.12.c.ii.(2)] in their 2011 Annual Report.
- (2) The Permittees shall report sampling and chemical analysis results at pilot locations [Provision C.12.c.ii.(3)] in their 2011 Annual Reports.
- (3) The Permittees shall report on proposed abatement opportunities and activities [Provision C.12.c.ii.(4) and (5)], responsible parties, funding, agency oversight, and schedules in their 2012 Annual Report.
- (4) The Permittees shall report results of abatement program effectiveness and estimates of loads reduced (see C.11.g) in the March 15, 2014 Integrated Monitoring Report.

C.12.d. Conduct Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices

- i. **Task Description** – The Permittees shall jointly evaluate ways to enhance PCBs load reduction benefits of operation and maintenance activities that remove or manage sediment. The purpose of this task is to implement these management practices at the pilot scale in five drainages during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of enhanced sediment removal and management practices in subsequent permit terms. The Permittees shall also quantify and report the amount of PCBs loads removed or avoided resulting from implementation of these measures.
- ii. **Implementation Level** – In all pilot program drainages selected as part of Provision C.12.c, the Permittees shall jointly evaluate ways to enhance existing sediment removal and management practices such as municipal street sweeping, curb clearing parking restrictions, inlet cleaning, catch basin cleaning, stream and stormwater conveyance system maintenance, and pump station cleaning via increased effort and/or retrofits. This evaluation shall also include consideration of street flushing and capture, collection, or routing to the sanitary sewer (in coordination and consultation with local sanitary sewer agency) as a potential enhanced management practice. The Permittees shall also jointly evaluate existing information on high-efficiency street sweepers. The goal is to evaluate the cost-effectiveness of high-efficiency street sweeping relative to reducing pollutant loads. The Permittees shall develop recommendations for follow-up studies to be conducted.
- iii. **Reporting** – The Permittees shall submit a progress report on the results of these two evaluations in their 2010 Annual Report and the final evaluation results in their 2011 Annual Report.
- iv. Beginning July 1, 2011, the Permittees shall implement pilot studies for the most potentially effective measure(s) based on the evaluation of Provision C.12.d. ii. throughout the region.
- v. **Reporting** – The Permittees shall report effectiveness of enhanced practices pilot implementation in the March 15, 2014 Integrated Monitoring Report, and their plan for implementing enhanced practices in the next permit term.

C.12.e. Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit

- i. **Task Description** – The Permittees shall evaluate and quantify the removal of PCBs by on-site treatment systems via retrofit of such systems into existing storm drain systems. The purpose of this task is to implement on-site treatment projects at the pilot scale in ten locations during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of on-site treatment retrofits in subsequent permit terms.

- ii. **Implementation Level** – The Permittees, working collaboratively, shall identify at least 10 locations throughout the Permittees’ jurisdictions that present opportunities to install and evaluate⁵¹ on-site treatment systems (e.g., detention basins, bioretention units, sand filters, infiltration basins, treatment wetlands) and shall assess the best treatment options for those locations. Every county (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano) should have at least one location. This assessment shall identify potential locations draining a variety of land uses, discuss technical feasibility, and discuss economical feasibility. The Permittees shall choose pilot study locations primarily on the basis of elevated PCBs concentrations with additional consideration to mercury concentrations.
- iii. On the basis of the Provision C.12.e.ii. report, the Permittees shall select sites to perform pilot studies and shall conduct pilot studies in selected locations. Taken as a group, these 10 pilot study locations should span treatment types and drainage characteristics.
- iv. **Reporting** –
 - (1) In their 2011 Annual Report, the Permittees shall report on candidate locations with types of treatment retrofit for each location. The report shall include assessment of at least 10 locations.
 - (2) In the March 15, 2014 Integrated Monitoring Report, the Permittees shall report status, results, PCBs-removal effectiveness, and lessons learned from the pilot studies and their plan for implementing this type of treatment on an expanded basis throughout the region during the next permit term.

C.12.f. Diversion of Dry Weather and First Flush Flows to POTWs

- i. **Task Description** – The Permittees shall evaluate the reduced loads of PCBs from diversion of dry weather and first flush stormwater flows to sanitary sewers. The knowledge and experience gained through pilot implementation will be used to determine the implementation scope of urban runoff diversion in subsequent permit terms. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of urban runoff diversion projects in subsequent permit terms.
- ii. **Implementation Level** – The Permittees shall implement pilot projects to address the role of pump stations as a source of pollutants of concern (primarily PCBs and secondarily mercury). This work is in addition to Provisions C.2 and C.10 that address dissolved oxygen depletion and trash impacts in receiving waters. The objectives of this provision are: to implement five pilot projects for urban runoff diversion from stormwater pump stations to POTWs; evaluate the reduced loads of mercury and PCBs resulting from the diversion; and gather

⁵¹ The Permittees may evaluate a maximum of two pre-existing treatment systems of the ten total required systems to be evaluated provided that these existing treatment systems are applicable to the intent of this provision.

information to guide the selection of additional diversion projects required in future permits. Collectively, the Permittees shall select 5 stormwater pump stations and 5 alternates by evaluating drainage characteristics and the feasibility of diverting flows to the sanitary sewer.

- (1) The Permittees should work with the local POTW on a watershed, program, or regional level to evaluate feasibility and to establish cost sharing agreements. The feasibility evaluation shall include, but not be limited to, costs, benefits, and impacts on the stormwater and wastewater agencies and the receiving waters relevant to the diversion and treatment of the dry weather and first flush flows.
- (2) From this feasibility evaluation, the Permittees shall select 5 pump stations and 5 alternates for pilot diversion studies. At least one urban runoff diversion pilot project shall be implemented in each of the five counties (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano). The pilot and alternate locations should be located in industrially dominated catchments where elevated PCB concentrations are documented.
- (3) The Permittees shall implement flow diversion to the sanitary sewer at the 5 pilot pump stations. As part of the pilot studies, they shall monitor and measure PCBs load reduction.

iii. Reporting –

- (1) The Permittees shall summarize the results of the feasibility evaluation in their 2010 Annual Report, including:
 - Selection criteria leading to the identification of the 5 candidate and 5 alternate pump station for pilot studies.
 - Time schedules for conducting the pilot studies.
 - A proposed method for distributing PCBs load reductions to participating wastewater and stormwater agencies.
- (2) The Permittees shall report annually on the status of the pilot studies in each subsequent annual report.
- (3) The March 15, 2014 Integrated Monitoring Report shall include:
 - Evaluation of pilot program effectiveness.
 - PCBs loads reduced.
 - Updated feasibility evaluation procedures to guide future diversion project selection.

C.12.g. Monitor Stormwater PCB Pollutant Loads and Loads Reduced

The Permittees shall develop and implement a monitoring program as required in Provision C.8.f to quantify PCBs loads and loads reduced (see C.11.g for details) through the source control, treatment and other management measures implemented as part of the pilot studies of C.12.a through C.12.f.

C.12.h. Fate and Transport Study of PCBs in Urban Runoff

- i. **Task Description** – The Permittees shall conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of PCBs discharged in urban runoff.
- ii. **Implementation Level** – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.
- iii. **Reporting** – The Permittees shall submit in their 2010 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a schedule. The Permittees shall report on status of the studies in their 2011 and 2012 Annual Reports. The Permittees shall report in the March 15, 2014 Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.i. Development of a Risk Reduction Program Implemented throughout the Region

- i. **Task Description** – The Permittees shall develop and implement or participate in effective programs to reduce PCBs-related risks to humans and quantify the resulting risk reductions from these activities.
- ii. **Implementation Level** – The risk reduction activities shall include investigating ways to address public health impacts of PCBs in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of health impacts to those people and communities most likely to be affected by PCBs in San Francisco Bay-caught fish, such as subsistence fishers and their families. Such strategies should include public participation in developing effective programs in order to ensure their effectiveness. The Permittees may include studies needed to establish effective exposure reduction activities and risk communication messages as part of their planning. The risk reduction activities may be performed by a third party if the Permittees wish to provide funding for this purpose. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts.
- iii. **Reporting** – The Permittees shall submit in their 2010 Annual Report the specific manner in which these risk reduction activities will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report on status of the studies in their 2011 and 2012 Annual Reports. The Permittees shall report the findings and results of the studies completed, planned, or in progress as well as the status of other risk reduction actions in the March 15, 2014 Integrated Monitoring Report.

C.13. Copper Controls

The control program for copper is detailed below. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of C.13 Provisions through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

- i. Task Description** – The Permittees shall ensure that local ordinance authority is established to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs to storm drains.
- ii. Implementation Level**
 - (1) The Permittees shall develop BMPs on how to manage the waste during and post-construction.
 - (2) The Permittees shall require use of appropriate BMPs when issuing building permits.
 - (3) The Permittees shall educate installers and operators on appropriate BMPs.
 - (4) The Permittees shall enforce against noncompliance.
- iii. Reporting**
 - (1) The Permittees shall certify adequate legal authority in their 2011 Annual Report or otherwise provide justification for schedule not to exceed one year to comply.
 - (2) The Permittees shall report annually, starting with their 2012 Annual Report, on training, permitting and enforcement activities.
 - (3) In their 2013 Annual Report, the Permittees shall evaluate the effectiveness of these measures, including BMP implementation and propose any additional measures to address this source.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

- i. Task Description** – By adopting local ordinances, the Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.
- ii. Implementation Level** – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including

connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

- iii. **Reporting** – The Permittees shall certify adequate legal authority in their 2011 Annual Report or otherwise provide justification for schedule not to exceed one year to comply.

C.13.c. Vehicle Brake Pads

- i. **Task Description** – The Permittees shall engage in efforts to reduce the copper discharged from automobile brake pads to surface waters via urban runoff.
- ii. **Implementation Level** – The Permittees shall participate in the Brake Pad Partnership (BPP) process to develop California legislation phasing out copper from certain automobile brake pads sold in California.
- iii. **Reporting** – The Permittees shall report on legislation development and implementation status in Annual Reports during the permit term. In their 2013 Annual Report, the Permittees shall assess status of copper water quality issues associated with automobile brake pads and recommend brake pad-related actions for inclusion in subsequent permits if needed.

C.13.d. Industrial Sources

- i. **Task Description** – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.
- ii. **Implementation Level** –
 - (1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.
 - (2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.
 - (3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on-site.
- iii. **Reporting**

The Permittees shall highlight copper reduction results in the industrial inspection component in the C.13 portion of each Annual Report beginning September 2010.

C.13.e. Studies to Reduce Copper Pollutant Impact Uncertainties

- i. **Task Description** – The Permittees shall conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and technical studies to investigate sub-lethal effects on salmonids.
- ii. **Implementation Level** – Technical uncertainties regarding copper effects in the Bay are described in the Basin Plan’s implementation program for copper site-specific objectives. These uncertainties include toxicity to Bay benthic organisms possibly caused by high copper concentrations as well as possible impacts to the olfactory system of salmonids. The Permittees shall ensure that these studies are supported and conducted. Similar requirements are included in NPDES permits for wastewater discharges. The Permittees shall submit in their 2010 Annual Report the specific manner in which these information needs will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report the findings and results of the studies completed, planned, or in progress in their 2012 Annual Report.

C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium

The control program for PBDEs, legacy pesticides, and selenium is detailed below. The Permittees shall perform the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to gather concentration and loading information on a number of pollutants of concern (e.g., PBDEs, DDT, dieldrin, chlordane, selenium) for which TMDLs are planned or are in the early stages of development. The Permittees may comply with any requirement of C.14 Provisions through a collaborative effort.

C.14.a. Control Program for PBDEs, Legacy Pesticides, and Selenium.

- i. **Task Description** – To determine if urban runoff is a conveyance mechanism associated with the possible impairment of San Francisco Bay for PBDEs, legacy pesticides (such as DDT, dieldrin, and chlordane), and selenium, the Permittees shall work with the other municipal stormwater management agencies in the Bay Region to implement a plan (PBDEs/Legacy Pesticides/Selenium Plans) to identify, assess, and manage controllable sources of PBDEs, legacy pesticides, and selenium found in urban runoff, if any. The Water Board recognizes that these three pollutants are distinct in terms of origin and transport, but they have been grouped into a single permit provision because the requirements are identical. The Water Board anticipates that some of the control measures that are developed for PCBs consistent with aforementioned efforts warrant consideration for the control of PBDEs and possibly legacy pesticides.
- ii. **Implementation Level** – The PBDEs/Legacy Pesticides/Selenium Plan shall include actions to do the following:

Characterize the representative distribution of PBDEs, legacy pesticides, and selenium in the urban areas of the Bay Region covered by this permit to determine:

 - (1) If PBDEs, legacy pesticides, and selenium are present in urban runoff;
 - (2) If PBDEs, legacy pesticides, or selenium are distributed relatively uniformly in urban areas; and
 - (3) Whether storm drains or other surface drainage pathways are sources of PBDEs, legacy pesticides, or selenium in themselves, or whether there are specific locations within urban watersheds where prior or current uses result in land sources contributing to discharges of PBDEs, legacy pesticides, or selenium to San Francisco Bay via urban runoff conveyance systems.
- iii. Report on progress in 2010 and 2011 Annual Reports. Submit in the 2012 Annual Report a report with the results of the characterization of PBDEs, legacy pesticides, and selenium in urban areas throughout the Bay Region.
- iv. Provide information to allow calculation of PBDEs, legacy pesticides, and selenium loads to San Francisco Bay from urban runoff conveyance systems.

- v. Submit in the 2013 Annual Report a report with the information required to compute such loads to San Francisco Bay of PBDEs, legacy pesticides, and selenium from urban runoff conveyance systems throughout the Bay.
- vi. Identify control measures and/or management practices to eliminate or reduce discharges of PBDEs, legacy pesticides, or selenium conveyed by urban runoff conveyance systems.
- vii. Submit in the 2013 Annual Report a report identifying such control measures/management practices.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

- i. **Discharge Type** – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:
 - (1) Flows from riparian habitats or wetlands;
 - (2) Diverted stream flows;
 - (3) Flows from natural springs;
 - (4) Rising ground waters;
 - (5) Uncontaminated and unpolluted groundwater infiltration;
 - (6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;
 - (7) Pumped groundwater from drinking water aquifers; and
 - (8) NPDES permitted discharges (individual or general permits).
- ii. **Implementation Level** – The non-stormwater discharges listed in Provision C.15.a.i above are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-viii below.

- i. **Discharge Type** – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

- (1) **Pumped Groundwater from Non Drinking Water Aquifers** – Groundwater pumped from monitoring wells, used for groundwater basin management, which are owned and/or operated by the Permittees who pump groundwater as drinking water. These aquifers tend to be shallower, when compared to drinking water aquifers.
 - (a) **Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:
 - (i) The water samples shall meet water quality standards consistent with the existing effluent limitations in the Water Board's NPDES General Permits, such as NPDES Nos. CAG912002 and CAG912003 for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by fuel and VOCs, respectively, and NPDES No. CAG912004 for discharges of low-level, incidental, and potentially contaminated groundwater.
 - (ii) The water samples shall be analyzed using approved USEPA Methods (e.g., (a) USEPA Method 160.2 for total suspended solids; (b) USEPA Method 8015 Modified for total petroleum hydrocarbons; (c) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (d) USEPA Method 3005 for metals.
 - (iii) The water samples shall be analyzed for pH and turbidity.
 - (iv) If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.
 - (b) **Required BMPs** – When uncontaminated (meeting the criteria in C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:
 - (i) Discharges shall be properly controlled and maintained to prevent erosion at the discharge point and at a rate that avoids scouring of banks and excess sedimentation in the receiving waterbody.
 - (ii) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.
 - (iii) Turbidity of the discharged groundwater shall be maintained below 50 NTUs for discharges to dry creeks, 110 percent of the

- ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.
- (iv) pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5.
- (c) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.
- (2) **Pumped⁵² Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**
- (a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements.
- (b) Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.
- (c) If the discharge options in C.15.b.i.(2)(b) above are not feasible and these discharges must enter a storm drain, sampling shall be done to verify that the discharge is uncontaminated.
- (i) The discharge shall meet water quality standards consistent with the existing effluent limitations in the Water Board's NPDES General Permits, such as NPDES Nos. CAG912002 and CAG912003 for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by fuel and VOCs, respectively, and NPDES No. CAG912004 for discharges of low-level, incidental, and potentially contaminated groundwater.
- (ii) The Permittees shall require that water samples from these discharge types be analyzed using approved USEPA Methods (e.g., (a) USEPA Method 160.2 for total suspended solids; (b) USEPA Method 8015 Modified for total petroleum hydrocarbons; (c) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (d) USEPA Method 3005 for metals.
- (d) **Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(c) above, the Permittees shall require the following during discharge:
- (i) Proper control and maintain to prevent erosion at the discharge point and at a rate that avoids scouring of banks and excess sedimentation in the receiving waterbody.
- (ii) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include

⁵² Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.

- (iii) Testing of water samples for turbidity and pH on the first two consecutive days of dewatering.
- (iv) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.
- (v) pH of discharged water shall be maintained within the range of 6.5 to 8.5.
- (e) If a Permittee determines that a discharger or a project proponent is unable to comply with the above criteria, the discharger shall be directed to obtain approval or permits directly from the Water Board.
- (f) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Types – Planned,⁵³ Unplanned,⁵⁴ and Emergency Discharges of the Potable Water System

- (1) **Planned Discharges** – Planned discharges are routine operation and maintenance activities in the potable water distribution system that can be scheduled in advance, such as disinfecting water mains, testing fire hydrants, storage tank maintenance, cleaning and lining pipe sections, routine distribution system flushing, reservoir dewatering, and water main dewatering activities. The following requirements only apply to those Permittees that are water purveyors and pertain to their planned discharges of potable water to their storm drain systems.
 - (a) **Required BMPs⁵⁵** – The Permittees shall implement appropriate BMPs for dechlorination, and erosion and sediment controls for all planned potable water discharges.

⁵³ Planned discharges typically result from required routine operation and maintenance activities that can be scheduled in advance. Planned discharges are easier to control than unplanned discharges, and the BMPs are significantly easier to plan and implement.

⁵⁴ Unplanned discharges are non-routine, the result of accidents or incidents that cannot be scheduled or planned for in advance.

⁵⁵ Reference for BMPs, monitoring methods: *Guidelines for the Development of Your BMP Manual for Drinking Water System Releases*. Developed by the California-Nevada Sections of the American Water Works Association (CA-NV AWWA), Environmental Compliance Committee (ECC) 2005.

(b) Notification Requirements

- (i) The Permittees shall notify the Water Board staff at least one week in advance for planned discharges with a flow rate of 250,000 gallons per day or more, or a total volume of 500,000 gallons or more. The Permittees shall also notify other interested parties who may be impacted by planned discharges, such as flood control agencies, downstream jurisdictions, and non-governmental organizations such as creek groups, before discharge. The notification shall include the following information, but is not limited to: (1) project name; (2) type of discharges; (3) receiving waterbody(ies); (4) date of discharge; (5) time of discharge (in military time); (6) estimated volume (gallons); and (7) estimated flow rate (gallons per day); and (8) monitoring plan of the discharges and receiving water. If receiving water monitoring is infeasible or is not practicable, justification shall be provided.

(c) Monitoring and Reporting Requirements

- (i) The Permittees shall monitor planned discharges for pH, chlorine residual, and turbidity.
- (ii) The following discharge benchmarks shall be used to evaluate the effectiveness of BMPs for all planned discharges:
- Chlorine residual 0.05 mg/L using the field test (Standard Methods 4500-Cl F and F) or equivalent
 - pH ranges between 6.5 and 8.5
 - Turbidity of 50 NTU post-BMPs or limit increase in turbidity above background level as follows:

<u>Receiving Water Background</u>	<u>Incremental Increase</u>
Dry Creek	50 NTU
< 50 NTU	5 NTU
50–100 NTU	10 NTU
> 100 NTU	10% of background

- (iii) The Permittees shall submit the following information with the Annual Report in tabular form for all planned discharges. Reporting content shall include, but is not limited to the following parameters: (1) project name; (2) type of discharge; (3) receiving waterbody(ies); (4) date of discharge; (5) duration of discharge (in military time); (6) estimated volume (gallons); (7) estimated flow rate (gallons per day); (8) chlorine residual (mg/L); (9) pH; (10) turbidity (NTU) for receiving water where feasible and point of discharge, and (11) description of implemented BMPs or corrective actions.

- (2) **Unplanned Discharges** – Unplanned discharges are non-routine activities such as water line breaks, leaks, overflows, fire hydrant shearing, and emergency flushing. The following requirements only apply to those Permittees that are water purveyors and pertain to their unplanned discharges of potable water to their storm drain systems.

- (a) **Required BMPs** – The Permittees shall implement appropriate BMPs for dechlorination and erosion and sediment control for all unplanned discharges upon containing the discharge and attaining safety of the discharge site.
- (b) **Administrative BMPs** – In some instances, the Permittees shall implement Administrative BMPs, such as source control measures, managerial practices, operations and maintenance procedures, or other measures to reduce or prevent potential pollutants from being discharged during unplanned discharges upon containing the discharge and attaining safety of the discharge site.
- (c) **Notification Requirements**
- (i) The Permittees shall report to the State Office of Emergency Services as soon as possible, but no later than two hours after becoming aware of (1) any aquatic impacts (e.g., fish kill) as a result of the unplanned discharges, or (2) when the discharge might endanger or compromise public health and safety.
- (ii) The Permittees shall report to Water Board staff, by telephone or email as soon as possible, but no later than 24 hours after becoming aware of any unplanned discharges, where the total chlorine residual is greater than 0.05 mg/L and the total volume is approximately 50,000 gallons or more.
- Within five working days after the 24-hour telephone or email report, the Permittees shall submit a report documenting the discharge and corrective actions taken to Water Board staff and other interested parties.
- (d) **Monitoring and Reporting Requirements**
- (i) The Permittees shall monitor at least 10% of their unplanned discharges for pH and chlorine residual, and visually assess each discharge for turbidity immediately downstream of implemented BMPs to demonstrate their effectiveness. After the implementation of appropriate BMPs, the discharge pH levels outside the discharge ranges (below 6.5 and above 8.5), chlorine residual above 0.05 mg/l, or moderate and high turbidity shall trigger BMP improvement. If the Permittees monitor more than 10% of the unplanned discharges, all monitoring results shall be included in the Annual Report.
- (ii) The Permittees shall submit the following information with the Annual Report in tabular form for all unplanned discharges. The reporting format and content shall be as described in Provision C.15.b.ii.(1)(c)(iii) of the Planned Discharges above. In addition, these reports shall also state the time of discharge discovery, notification time, inspector arrival time, and responding crew arrival time.
- (iii) After 18 months of consecutive data gathering, a Permittee may propose, to the Executive Officer, a reduced monitoring plan targeting specific “high-risk” or “environmentally sensitive”

areas (i.e., areas that are prone to erosion and excess sedimentation at high flows, support rare or endangered species, or provide aquatic habitat with proven effective BMPs). Until the Executive Officer approves the reduced monitoring plan, the Permittee shall continue the monitoring plan prescribed in C.15.b.iii.(2)(d)(i).

- (3) **Emergency Discharges** – Emergency discharges are the result of firefighting, unauthorized hydrant openings, natural or man-made disasters (e.g., earthquakes, floods, wildfires, accidents, terrorist actions).

Required BMPs

- (a) The Permittees shall implement or require fire fighting personnel to implement BMPs for emergency discharges. However, the BMPs should not interfere with immediate emergency response operations or impact public health and safety. BMPs may include, but are not limited to, the plugging of the storm drain collection system for temporary storage, the proper disposal of water according to jurisdictional requirements, and the use of foam where there may be toxic substances on the property the fire is located.
- (b) During emergency situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). The Permittees or fire fighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.
- (c) **Reporting Requirements** – Reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

Required BMPs

- (1) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their MS4s.
- (2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, wash cars at commercial car wash facilities, etc.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) Required BMPs

- (a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algacide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.
- (b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no

other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.

- (c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection⁵⁶ to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.
 - (d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.
 - (e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.
- (2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

- (1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:
 - (a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;
 - (b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;
 - (c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;
 - (d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and,
 - (e) Implementing the Illicit Discharge Enforcement Response Plan from C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their MS4s.

⁵⁶ This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

(2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

vii. Additional Discharge Types –The Permittees shall identify and describe additional types and categories of discharges not yet listed in Provision C.15.b that they propose to conditionally exempt from Prohibition A.1 in periodic submissions to the Executive Officer. For each such category, the Permittees shall identify and describe, as necessary and appropriate to the category, either documentation that the discharges are not sources of pollutants to receiving waters or circumstances in which they are not found to be sources of pollutants to receiving waters. Otherwise, the Permittees shall describe control measures to eliminate adverse impacts of such sources, procedures and performance standards for their implementation, procedures for notifying the Water Board of these discharges, and procedures for monitoring and record management.

viii. Permit Authorization for Exempted Non-Stormwater Discharges

(1) Discharges of non-stormwater from sources owned or operated by the Permittees are authorized and permitted by this Permit, if they are in accordance with the conditions of this provision.

(2) The Water Board may require dischargers of non-stormwater, other than the Permittees, to apply for and obtain coverage under an NPDES permit and to comply with the control measures pursuant to Provision C.15.b. Non-stormwater discharges that are in compliance with such control measures may be accepted by a Permittee and are not subject to Prohibition A.1.

(3) The Permittees may propose, as part of their annual updates consistent with the requirements of Provision C.15.b of this Permit, additional categories of non-stormwater discharges with BMPs, to be included in the exemption to Prohibition A.1. Such proposals may be subject to approval by the Executive Officer as a minor modification of the Permit.

C.16. Annual Reports

- C.16.a.** The Permittees shall submit Annual Reports electronically and in paper copy upon request by September 15 of each year. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.15. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.
- C.16.b.** The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2010. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by April 1 of each year for the following annual report, to more accurately reflect the reporting requirements of Provisions C.1 – C.15, with the agreement of the Permittees and by the approval of the Executive Officer.
- C.16.c.** The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit in the Annual Report the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.17. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

- C.17.a.** To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;
- C.17.b.** To incorporate applicable requirements of statewide water quality control plans adopted by the State Board or amendments to the Basin Plan approved by the State Board; or
- C.17.c.** To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable.

C.18. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment K of this Order.

C.19. Expiration Date

This Order expires on November 30, 2014, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

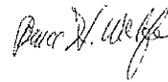
C.20. Rescission of Old Orders

Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, and R2-2003-0034 are hereby rescinded on the effective date of this Order, which shall be December 1, 2009, provided that the Regional Administrator of USEPA, Region IX, does not object.

C.21. Effective Date

The Effective Date of this Order and Permit shall be December 1, 2009, provided that the Regional Administrator of USEPA, Region IX, does not object.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 14, 2009.



Digitally signed
by Bruce Wolfe
Date:
2009.10.15
17:21:01 -07'00'

Bruce H. Wolfe
Executive Officer

- Appendix I: Municipal Regional Stormwater Permit Fact Sheet
- Attachment A: Provision C.3.b. Sample Reporting Table
- Attachment B: Provision C.3.g. Alameda Permittees Hydromodification Requirements
- Attachment C: Provision C.3.g. Contra Costa Permittees Hydromodification Requirements
- Attachment D: Provision C.3.g. Fairfield-Suisun Permittees Hydromodification Requirements
- Attachment E: Provision C.3.g. San Mateo Permittees Hydromodification Requirements
- Attachment F: Provision C.3.g. Santa Clara Permittees Hydromodification Requirements
- Attachment G: Provision C.3.h. Sample Reporting Table
- Attachment H: Provision C.8. Status & Long-Term Monitoring Follow-up Analysis and Actions
- Attachment I: Provision C.8. Standard Monitoring Provisions
- Attachment J: Provision C.10. Minimum Trash Capture Areas and Minimum Number of Trash Hot Spots
- Attachment K: Standard NPDES Stormwater Permit Provisions

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CWA	Federal Clean Water Act
CWC	California Water Code
DCIA	Directly Connected Impervious Area
ERP	Enforcement Response Plan
FR	Federal Register
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable
MRP	Municipal Stormwater Regional Permit
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission

NAFSMA	National Association of Flood & Stormwater Management Agencies
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
O&M	Operation and Maintenance
PBDE	Polybrominated Diphenyl Ether
POTW	Publicly Owned Treatment Works
RCRA	Resource Conservation and Recovery Act
RMP	Regional Monitoring Program
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SIC	Standard Industrial Classification
SMWPPP	San Mateo Countywide Water Pollution Prevention Program
SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Toxic Substances Control Act
USEPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations

GLOSSARY

Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the state protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.
Construction Site	Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, paving, disturbances to ground such as stockpiling, and excavation. Construction sites are all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of water quality standards because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff, or a non-stormwater discharge
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.
Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs

	naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Full Trash Capture Device	Full trash capture systems are defined as “any device or series of devices that traps all particles retained by a 5mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area.” Trash collection booms and sea curtains do not meet this definition, but are effective for removal of floating trash if properly maintained. Because these devices do not meet the Full Trash Capture Device definition, only ¼ of the catchment area treated by these measures is credited toward meeting the trash management area requirement of C.10.a.
General Permits	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State of California has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
Grading	The cutting and/or filling of the land surface to a slope or elevation.
Hydrologic source control measures	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
Hydromodification	The modification of a stream’s hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.
Illicit Discharge	Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term <i>illicit discharge</i> includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Regional Water Board Executive Officer.
Impervious Surface	A surface covering or pavement of a developed parcel of land that prevents the land’s natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under

	Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.
Industrial Development	Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.
Infill Site	A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.
Infiltration Device	Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes French drains).
Joint Stormwater Treatment Facility	A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other,
Local Roads	Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.
Maximum Extent Practicable (MEP)	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. Clean Water Act (CWA) 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.” Also see State Board Order WQ 2000-11.
Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law...including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in

	40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.
Pervious Pavement	Pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste) litter and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and

	highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).
Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMP	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Standard Industrial Classification (SIC)	A federal system for classifying establishments by the type of activity in which they are engaged using a four-digit code.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain water quality standards. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet water quality standards even after application of technology-based controls,

	more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.
Toxicity Identification Evaluation (TIE)	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.
Trash and Litter	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.
Treatment	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
Waste Load Allocations (WLAs)	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
Water Quality Control Plan (Basin Plan)	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required. The latest version is effective as of December 22, 2006.
Water Quality Objectives	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
Water Quality Standards	State-adopted and USEPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the water quality criteria that must be met to protect designated uses. Water quality standards also include the federal and state anti-degradation policy.
Wet Season	October 1 through April 30 of each year

APPENDIX I

MUNICIPAL REGIONAL STORMWATER PERMIT FACT SHEET

**FACT SHEET/RATIONALE
TECHNICAL REPORT**

for

ORDER NO. R2-2009-0074

NPDES Permit No. CAS612008

**Municipal Regional Stormwater NPDES Permit
and
Waste Discharge Requirements**

for

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program

The City of Vallejo and the Vallejo Sanitation and Flood Control District

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I. CONTACT INFORMATION

Water Board Staff Contact: Dale Bowyer, 1515 Clay Street, Suite 1400, Oakland, CA 94612, 510-622-2323, 510-622-2501 (fax), email: dbowyer@waterboards.ca.gov

The Permit and other related documents can be downloaded from the Water Board website at: <http://www.waterboards.ca.gov/sanfranciscobay/mrp.htm>

Comments can be electronically submitted to mrp@waterboards.ca.gov.

All documents referenced in this Fact Sheet and in the Order are available for public review at the Water Board office, located at the address listed above. Public records are available for inspection during regular business hours, from 9:00 am to 4:00 pm, Monday through Friday, 12 - 1 pm excluded. Per the Governor's order calling for furloughs, the Water Board office will be closed the first three Fridays of each month through June 2010. To schedule an appointment to inspect public records, contact Melinda Wong at 510-622-2430.

II. PERMIT GOALS AND PUBLIC PROCESS

Goals

The Goals for the Municipal Regional Stormwater Permit (hereinafter, the Permit) Development Process include:

1. Consolidate six Phase I municipal stormwater NPDES permits into one consistent permit which is regional in scope.
2. Include more specificity in NPDES permit order language and requirements. Create (A) required stormwater management actions, (B) a specific level of implementation for each action or set of actions, and (C) reporting and effectiveness evaluation requirements for each action sufficient to determine compliance.
3. Incorporate the Stormwater Management Plan level of detail and specificity into the Permit. Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits, but have not received the level of public review in the adoption process necessary relative to their importance in adequate stormwater pollutant management implementation.
4. Implement and enhance actions to control 303(d) listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
5. Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants.

Public Process

Water Board staff conducted a series of stakeholder meetings and workshops with the Permittees and other interested parties to develop this Permit over the past 3 years. These meetings included Water Board staff, representatives of the Permittees, representatives of

environmental groups, homebuilders, private citizens, and other interested parties. The following is a summary of the lengthy stakeholder process.

(2004–2005) Water Board staff and the Bay Area Stormwater Management Agencies Association (BASMAA) agreed to develop a municipal regional stormwater permit. Board staff and BASMAA held monthly meetings to agree on the regional permit approach and developed concepts and ground rules for a Steering Committee. The Steering Committee for the Permit began regular monthly meetings, and there was agreement to form work groups to develop options for permit program components in table format.

(2006) Water Board staff, BASMAA, and nongovernmental groups met and discussed the Performance Standard (i.e., actions, implementation levels, and reporting requirements) tables from six workgroups. In addition to the Steering Committee, Work Group Stakeholder meetings focused on the six program elements to complete the Performance Standard Tables and discuss other issues in preparation for creating the first Draft Permit Provisions. Two large public workshops were held in November with all interested stakeholders to discuss Work Group products.

(2007) The Water Board held a public workshop in March to receive public input. Board staff distributed an Administrative Draft Permit dated May 1, 2007, held multiple meetings and received comment.

(2007- 2008) On December 14, 2007, Board staff distributed the Tentative Order for a 77-day written public comment period ending February 29, 2008. A public hearing for oral testimony was held on March 11, 2008. During the remainder of 2008 there were additional meetings with stakeholders, and Board staff worked on revisions to the Tentative Order and produced responses to both written comments received by February 29, 2008, and oral comments received at the March 11, 2008, hearing. The Revised Tentative Order for the MRP was released on February 11, 2009, and a May 13, 2009, hearing before the Water Board was scheduled. Written comments on the revisions to the Tentative Order were received until April 3, 2009.

(2009) After the May 2009 MRP Public Hearing, Water Board staff held numerous meetings with the Permittees (via the Bay Area Stormwater Management Agencies Association) and other key stakeholders including Save the Bay, NRDC, the Northern California Homebuilders, S.F. BayKeeper and the U.S. EPA. These meetings have been focused on discussion of revisions to the MRP Tentative Order in response to comments received, in an effort to resolve issues primarily related to Provisions C.3 New Development, C.8 Monitoring, C.10 Trash Load Reduction, C.11 Mercury Controls, C.12 PCBs Controls, and C.15 Exempt Non-Stormwater Discharges.

Implementation

It is the Water Board's intent that this Permit shall ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. This Permit requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Water Board is

requiring that these standard requirements be addressed through the implementation of technically and economically feasible control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in Provisions C.1 through C.15 of this Permit and section 402(p) of the CWA. Compliance with the Discharge Prohibitions, Receiving Water Limitations, and Provisions of this Permit is deemed compliance with the requirements of this Permit. If these measures, in combination with controls on other point and nonpoint sources of pollutants, do not result in attainment of applicable water quality objectives, the Water Board may invoke Provision C.1. and may reopen this Permit pursuant to Provisions C.1 and C.15 of this Permit to impose additional conditions that require implementation of additional control measures.

Each of the Permittees is individually responsible for adoption and enforcement of ordinances and policies, for implementation of assigned control measures or best management practices (BMPs) needed to prevent or reduce pollutants in stormwater, and for providing funds for the capital, operation, and maintenance expenditures necessary to implement such control measures/BMPs within its jurisdiction. Each Permittee is also responsible for its share of the costs of the area-wide component of the countywide program to which the Permittee belongs. Enforcement actions concerning non-compliance with the Permit will be pursued against individual Permittee(s) responsible for specific violations of the Permit.

III. BACKGROUND

Early Permitting Approach

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the pending federal NPDES regulations which would implement the amendment), the Water Board issued a municipal storm water Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo and Contra Costa Counties, rather than to individual cities over 100,000 population threshold. The cities chose to collaborate in countywide groups, to pool resources and expertise, and share information, public outreach and monitoring costs, among other tasks.

During the early permitting cycles, the county-wide programs developed many of the implementation specifics which were set forth in their Stormwater Pollution Prevention Management Plans (Plans). The permit orders were relatively simple documents that referred to the stormwater Plans for implementation details. Often specific aspects of permit and Plan implementation evolved during the five year permit cycle, with relatively significant changes approved at the Water Board staff level without significant public review and comment.

Merging Permit Requirements and Specific Requirements Previously Contained in Stormwater Management Plans

US EPA stormwater rules for Phase I stormwater permits envisioned a process in which municipal stormwater management programs contained the detailed BMP and specific level of implementation information, and are reviewed and approved by the permitting agency before the municipal NPDES stormwater permits are adopted. The current and previous permits established a definition of a stormwater management program and required each Permittee to submit an urban runoff management plan and annual work plans for implementing its stormwater management program. An advantage to this approach was that it provided flexibility for Permittees to tailor their stormwater management programs to reflect local priorities and needs. However, Water Board staff found it difficult to determine Permittees' compliance with the current permits, due to the lack of specific requirements and measurable outcomes of some required actions. Furthermore, federal stormwater regulations require that modifications to stormwater management programs, such as annual revisions to urban runoff management plans, be approved through a public process.

Recent court decisions have reiterated that federal regulations and State law require that the implementation specifics of Municipal Stormwater NPDES permits be adopted after adequate public review and comment, and that no significant change in the permit requirements except minor modifications can occur during the permit term without a similar level of public review and comment.

This Permit introduces a modification to these previous approaches by establishing the stormwater management program requirements and defining up front, as part of the Permit Development Process, the minimum acceptable elements of the municipal stormwater management program. The advantages of this approach are that it satisfies the public involvement requirements of both the federal Clean Water Act and the State Water Code. An advantage for Permittees and the public of this approach is that the permit requirements are known at the time of permit issuance and not left to be determined later through iterative review and approval of work plans. While it may still be necessary to amend the Permit prior to expiration, any need to this should be minimized.

This Permit does not include approval of all Permittees' stormwater management programs or annual reports as part of the administration of the Permit. To do so would require significantly increased staff resources. Instead, minimum measures have been established to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance. Each Permit provision and its reporting requirements are written with this in mind. That is, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites, etc.), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each individual Permittee's compliance through annual report review and the audit process.

The challenge in drafting the Permit is to provide the flexibility described above considering the different sizes and resources while ensuring that the Permit is still enforceable. To achieve this, the Permit frequently prescribes minimum measurable

outcomes, while providing Permittees with flexibility in the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Permit. To avoid these types of situations, a balance between flexibility and enforceability has been crafted into the Permit.

Current Permit Approach

In the previous permit issuances, the detailed actions to be implemented by the Permittees were contained in Stormwater Management Plans, which were separate from the NPDES permits, and incorporated by reference. Because those plans were legally an integral part of the permits and were subject to complete public notice, review and comment, this permit reissuance incorporates those plan level details in the permit, thus merging the Permittees' stormwater management plans into the permit in one document. This Permit specifies the actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable, in a manner designed to achieve compliance with water quality standards and objectives, and effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses within the Permittees' jurisdictions. This set of specific actions is equivalent to the requirements that in past permit cycles were included in a separate stormwater management plan for each Permittee or countywide group of Permittees. With this permit reissuance, that level of specific compliance detail is integrated into permit language and is not a separate document.

The Permit includes requirements for the following components:

- Municipal Operations
- New Development and Redevelopment
- Industrial and Commercial Site Controls
- Illicit Discharge and Elimination
- Construction Site Controls
- Public Information and Outreach
- Water Quality Monitoring
- Pesticides Toxicity Controls
- Trash Reduction
- Mercury Controls
- PCBs Controls
- Copper Controls
- Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides, and Selenium
- Exempt and Conditionally Exempt Discharges

IV. ECONOMIC ISSUES

Economic discussions of urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, when considering the cost of implementing the urban runoff programs, it is also important

to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits which result from program implementation.

It is very difficult to ascertain the true cost of implementation of the Permittees' urban runoff management programs because of inconsistencies in reporting by the Permittees. Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin that is not easily explained.⁵⁷ Despite these problems, efforts have been made to identify urban runoff management program costs, which can be helpful in understanding the costs of program implementation.

In 1999, United States Environmental Protection Agency (USEPA) reported on multiple studies it conducted to determine the cost of urban runoff management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be \$9.16 per household. USEPA also studied 35 Phase I municipalities, finding costs to be similar to those anticipated for Phase II municipalities, at \$9.08 per household annually.⁵⁸

A study on program cost was also conducted by the Los Angeles Regional Water Quality Control Board (LARWQCB), where program costs reported in the municipalities' annual reports were assessed. The LARWQCB estimated that average per household cost to implement the MS4 program in Los Angeles County was \$12.50.

The State Water Resources Control Board (State Water Board) also commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program. This study is current and includes an assessment of costs incurred by the City of Encinitas in implementing its program. Annual cost per household in the study ranged from \$18-46, with the City of Encinitas representing the upper end of the range.⁵⁹ The cost of the City of Encinitas' program is understandable, given the City's coastal location, reliance on tourism, and consent decree with environmental groups regarding its program. For these reasons, as well as the general recognition the City of Encinitas receives for implementing a superior program, the City's program cost can be considered as the high end of the spectrum for Permittee urban runoff management program costs.

It is important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been implemented by municipalities. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38% of program costs are new costs fully attributable to MS4 permits. The remainder of program costs were either pre-existing or resulted from enhancement of pre-existing programs.⁶⁰ The County of Orange found that even lesser amounts of program costs are solely attributable to MS4 permit compliance, reporting that the amount attributable to implement its Drainage Area Management Plan, its municipal

⁵⁷ LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003.p.2

⁵⁸ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.

⁵⁹ State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii

⁶⁰ Ibid. P. 58.

stormwater permit requirements, is less than 20% of the total budget. The remaining 80% is attributable to pre-existing programs.⁶¹

It is also important to acknowledge that the vast majority of costs that will be incurred as a result of implementing the Order are not new. Urban runoff management programs have been in place in this region for over 15 years. Any increase in cost to the Permittees will be incremental in nature.

Urban runoff management programs cannot be considered in terms of their costs only. The programs must also be viewed in terms of their value to the public. For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by USEPA to be \$158-210.⁶² This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento study corroborates USEPA's estimates, reporting annual household willingness to pay for statewide clean water to be \$180.⁶³ When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Another important way to consider urban runoff management program costs is to consider the implementation cost in terms of costs incurred by not improving the programs. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.⁶⁴ A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8% among bathers at those beaches resulted in about \$3 million annually in health-related expenses.⁶⁵ Extrapolation of such numbers to the beaches and other water contact recreation in San Francisco Bay and the tributary creeks of the region could result in huge expenses to the public.

Urban runoff and its impact on receiving waters also places a cost on tourism. The California Division of Tourism has estimated that each out-of-state visitor spends \$101.00 a day. The experience of Huntington Beach provides an example of the potential economic impact of poor water quality. Approximately 8 miles of Huntington Beach were closed for two months in the middle of summer of 1999, impacting beach visitation and the local economy.

Finally, it is important to consider the benefits of urban runoff management programs in conjunction with their costs. A recent study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost \$2.8 billion but provide \$5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be \$5.7 to \$7.4 billion, while benefits could

⁶¹ County of Orange, 2000. A NPDES Annual Progress Report. P. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

⁶² Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

⁶³ State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

⁶⁴ Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

⁶⁵ Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

reach \$18 billion.⁶⁶ Costs are anticipated to be borne over many years – probably ten years at least. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by USEPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.⁶⁷

V. LEGAL AUTHORITY

The following statutes, regulations, and Water Quality Control Plans provide the basis for the requirements of Order No. R2-2009-0074: CWA, California Water Code (CWC), 40 CFR Parts 122, 123, 124 (National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, Final Rule), Part II of 40 CFR Parts 9, 122, 123, and 124 (National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule), Water Quality Control Plan – Ocean Waters of California (California Ocean Plan), Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), 40 CFR 131 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule), and the California Toxics Rule Implementation Plan.

The legal authority citations below generally apply to directives in Order No. R2-2009-0074, and provide the Water Board with ample underlying authority to require each of the directives of Order No. R2-2009-0074.. Legal authority citations are also provided with each permit provision in this Fact Sheet.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

40 CFR 122.26(d)(2)(i)(B,C,E, and F) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B,C,D,E, and F) require that each Permittee’s permit application “shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: [...] (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; (D) Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system; (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all

⁶⁶ LARWQCB, 2004. Alternative Approaches to Stormwater Control.

⁶⁷ Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) requires “a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. [...] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. [...] Proposed management programs shall describe priorities for implementing controls.”

40 CFR 122.26(d)(2)(iv)(A -D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Control of illicit discharges is also required.

CWC 13377 – CWC section 13377 requires that “Notwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with anymore stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.”

Order No. R2-2009-0074 is an essential mechanism for achieving the water quality objectives that have been established for protecting the beneficial uses of the water resources in the San Francisco Bay Region. Federal NPDES regulation 40 CFR 122.44(d)(1) requires MS4 permits to include any requirements necessary to “achieve water quality standards established under CWA section 303, including State narrative criteria for water quality.” The term “water quality standards” in this context refers to a water body’s beneficial uses and the water quality objectives necessary to protect those beneficial uses, as established in the Basin Plan.

State Mandates

This Permit does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Permit implements federally mandated requirements under CWA section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-stormwater discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held that these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. USEPA*

(9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Permit is not reserved state authority under the CWA's savings clause (cf. *Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements that are not less stringent than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for MS4. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Association of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

Likewise, the provisions of this Permit to implement total maximum daily loads (TMDLs) are federal mandates. The CWA requires TMDLs to be developed for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once USEPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable WLA. (40 CFR 122.44(d)(1)(vii)(B).)

Second, the local agencies' (Permittees') obligations under this Permit are similar to, and in many respects less stringent than, the obligations of nongovernmental dischargers who are issued NPDES permits for stormwater discharges. With a few inapplicable exceptions, the CWA regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne regulates the discharge of waste (Water Code, section 13263), both without regard to the source of the pollutant or waste. As a result, the costs incurred by local agencies to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The CWA and the Porter-Cologne Water Quality Control Act largely regulate stormwater with an even hand, but to the extent that there is any relaxation of this evenhanded regulation, it is in favor of the local agencies. Except for MS4s, the CWA requires point source dischargers, including discharges of stormwater associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial stormwater discharges must strictly comply with water quality standards].) As discussed in prior State Water Board decisions, this Permit does not require strict compliance with water quality standards. (SWRCB Order No. WQ 2001-15, p. 7.) The Permit, therefore, regulates the discharge of waste in municipal stormwater more leniently than the discharge of waste from nongovernmental sources.

Third, the Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Permit. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Permittees can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Association of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising

taxes indicates that a program does not entail a cost subject to subvention. (County of Fresno v. State of California (1991) 53 Cal.3d 482, 487-488.)

Fourth, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent Permittees have voluntarily availed themselves of the Permit, the program is not a state mandate. (Accord County of San Diego v. State of California (1997) 15 Cal.4th 68, 107-108.) Likewise, the Permittees have voluntarily sought a program-based municipal stormwater permit in lieu of a numeric limits approach. (See City of Abilene v. USEPA (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The Permittees' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See Environmental Defense Center v. USEPA (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the Permittees' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under State law predates the enactment of Article XIII B, Section (6) of the California Constitution.

This Permit is based on the federal CWA, the Porter-Cologne Water Quality Control Act (Division 7 of the CWC, commencing with Section 13000), applicable State and federal regulations, all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Board, the Basin Plan, the California Toxics Rule, and the California Toxics Rule Implementation Plan.

Discussion: In 1987, Congress established CWA Amendments to create requirements for storm water discharges under the NPDES program, which provides for permit systems to regulate the discharge of pollutants. Under the Porter-Cologne Water Quality Control Act, the State Water Board and Regional Water Quality Control Boards (Water Boards) have primary responsibility for the coordination and control of water quality, including the authority to implement the CWA. Porter-Cologne (section 13240) directs the Water Boards to set water quality objectives via adoption of Basin Plans that conform to all state policies for water quality control. As a means for achieving those water quality objectives, Porter-Cologne (section 13243) further authorizes the Water Boards to establish waste discharge requirements (WDRs) to prohibit waste discharges in certain conditions or areas. Since 1990, the Water Board has issued area-wide MS4 NPDES permits. The Permit will re-issue Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, R2-2003-0034 to comply with the CWA and attain water quality objectives in the Basin Plan by limiting the contributions of pollutants conveyed by urban runoff. Further discussions of the legal authority associated with the prohibitions and directives of the Permit are provided in section V. of this document.

This Permit supersedes NPDES Permit Nos. CAS029718, CAS029831, CAS029912, CAS029921, CAS612005, and CAS612006.

Basin Plan

The Urban Runoff Management, Comprehensive Control Program section of the Basin Plan requires the Permittees to address existing water quality problems and prevent new problems associated with urban runoff through the development and implementation of a comprehensive control program focused on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Basin Plan comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s. A summary of the regulatory provisions is contained in Title 23 of the California Code of Regulations at section 3912. The Basin Plan identifies beneficial uses and establishes water quality objectives for surface waters in the Region, as well as effluent limitations and discharge prohibitions intended to protect those uses. This Permit implements the plans, policies, and provisions of the Water Board's Basin Plan.

Statewide General Permits

The State Water Board has issued NPDES general permits for the regulation of stormwater discharges associated with industrial activities and construction activities. To effectively implement the New Development (and significant redevelopment) and Construction Controls, Illicit Discharge Controls, and Industrial and Commercial Discharge Controls components in this Permit, the Permittees will conduct investigations and local regulatory activities at industrial and construction sites covered by these general permits. However, under the CWA, the Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Water Board staff intends to work cooperatively with the Permittees to ensure that industries and construction sites within the Permittees' jurisdictions are in compliance with applicable general permit requirements and are not subject to uncoordinated stormwater regulatory activities.

Regulated Parties

Each of the Permittees listed in this Permit owns or operates a MS4, through which it discharges urban runoff into waters of the United States within the San Francisco Bay Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is "interrelated" to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the United States.

Permit Coverage

The Permittees each have jurisdiction over and maintenance responsibility for their respective MS4s in the Region. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Permit, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Permit. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under NPDES permitting pursuant to USEPA Phase II stormwater regulations. Under Phase II, the Water

Board intends to permit these federal, State, and regional entities through use of a Statewide Phase II NPDES General Permit.

Discussion: Section 402 of the CWA prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a NPDES permit. Though urban runoff comes from a diffuse source, it is discharged through MS4s, which are point sources under the CWA. Federal NPDES regulation 40 CFR 122.26(a) (iii) and (iv) provide that discharges from MS4s, which service medium or large populations greater than 100,000 or 250,000 respectively, shall be required to obtain a NPDES permit. Federal NPDES regulation 40 CFR 122.26(a)(v) also provides that a NPDES permit is required for “A [storm water] discharge which the Director, or in States with approved NPDES programs, either the Director or the USEPA Regional Administrator, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.” Such sources are then designated into the program.

VI. PERMIT PROVISIONS

A. Discharge Prohibitions

Prohibition A.1. Legal Authority – CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”

Prohibition A.2. Legal Authority – San Francisco Bay Basin Plan, 2006 Revision, Chapter 4 Implementation, Table 4-1, Prohibition 7.

B. Receiving Water Limitations

Receiving Water Limitation B.1. Legal Authority – Receiving Water Limitations are retained from previous Municipal Stormwater Runoff NPDES permits. They reflect applicable water quality standards from the Basin Plan.

Receiving Water Limitation B.2. Legal Authority – Receiving Water Limitations are retained from previous Municipal Stormwater Runoff NPDES permits. They reflect applicable water quality standards from the Basin Plan.

C. Provisions

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The Water Board’s Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) contains the following waste discharge prohibition: “The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited.”

California Water Code section 13050(l) states “(1) ‘Pollution’ means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) ‘Pollution’ may include “contamination.”

California Water Code section 13050(k) states “‘Contamination’ means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. ‘Contamination’ includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.”

California Water Code section 13050(m) states “‘Nuisance’ means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes.”

California Water Code section 13241 requires each water board to “establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance [...]”

California Water Code Section 13243 provides that a water board, “in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”

California Water Code Section 13263(a) provides that waste discharge requirements prescribed by the water board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A -D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal storm water permits to include any requirements necessary to “[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

State Water Resources Control Board (“State Water Board”) Order WQ 1999-05, is a precedential order requiring that municipal stormwater permits achieve water quality standards and water quality standard based discharge prohibitions through the implementation of control measures, by which Permittees’ compliance with the permit can be determined. The State Water Board Order specifically requires that Provision C.1 include language that Permittees shall comply with water quality standards based discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges. State Water Board Order WQ 2001-15 refines Order 1999-05 by requiring an iterative approach to compliance with water quality standards that involves ongoing assessments and revisions.

C.2. Municipal Operations

Legal Authority

The following legal authority applies to Provision C.2:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), California Water Code (CWC) section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires, “A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires, “A description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires, “A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving waterbodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) requires, “A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires, “A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.2

- C.2-1** Municipal maintenance activities are potential sources of pollutants unless appropriate inspection, pollutant source control, and cleanup measures are implemented during routine maintenance works to minimize pollutant discharges to storm drainage facilities.

Sediment accumulated on paved surfaces, such as roads, parking lots, parks, sidewalks, landscaping, and corporation yards, is the major source of point source pollutants found in urban runoff. Thus, Provision C.2 requires the Permittees to designate minimum BMPs for all municipal facilities and activities as part of their ongoing pollution prevention efforts as set forth in this Permit. Such prevention measures include, but are not limited to, activities as described below. The work of municipal maintenance personnel is vital to minimize stormwater pollution, because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain. Maintenance personnel also play an important role in educating the public and in reporting and cleaning up illicit discharges.

- C.2-2** Road construction and other activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. In particular, poorly designed roads can act as man-made drainages that carry runoff and sediment into natural streams, impacting water quality.

Provision C.2 also requires the Permittees to implement effective BMPs for the following rural works maintenance and support activities: (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport; (b) Identification and prioritization of rural roads maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources; (c) Road and culvert construction designs that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability; (d) Development and implement an inspection program to maintain roads structural integrity and prevent impacts on water quality; (e) Provide adequate maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, re-grade roads to slope outward where consistent with road engineering safety standards, and install water bars; and (f) When replacing existing culverts or redesigning new culverts or bridge crossings use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.

Road construction, culvert installation, and other rural maintenance activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. Poorly

designed roads can act as preferential drainage pathways that carry runoff and sediment into natural streams, impacting water quality. In addition, other rural public works activities, including those the BMP approach would address, have the potential to significantly affect sediment discharge and transport within streams and other waterways, which can degrade the beneficial uses of those waterways. This Provision would help ensure that these impacts are appropriately controlled.

Specific Provision C.2 Requirements

Provision C.2.a-f. (Operation and Maintenance of Municipal Separate Storm Sewer Systems (MS4) facilities) requires that the Permittees implement appropriate pollution control measures during maintenance activities and to inspect and, if necessary, clean municipal facilities such as conveyance systems, pump stations, and corporation yards, before the rainy season. The requirements will assist the Permittees to prioritize tasks, implement appropriate BMPs, evaluate the effectiveness of the implemented BMPs, and compile and submit annual reports.

Provision C.2.d. (Stormwater Pump Stations) In late 2005, Board staff investigated the occurrence of low salinity and dissolved oxygen conditions in Old Alameda Creek (Alameda County) and Alviso Slough (Santa Clara County) in September and October of 2005. Board staff became aware of this problem in their review of receiving water and discharge sampling conducted by the U.S. Geological Survey as part of its routine monitoring on discharges associated with the former salt ponds managed by the U.S. Fish and Wildlife Service in Santa Clara County and the California Department of Fish and Game in Alameda County.

In the case of Old Alameda Creek, discharge of black-colored water from the Alvarado pump station to the slough was observed at the time of the data collection on September 7, 2005, confirming dry weather urban runoff as the source of the documented violations of the 5 mg/L dissolved oxygen water quality objective. Such conditions were measured again on September 21, 2005.

On October 17, 2005, waters in Alviso Slough were much less saline than the salt ponds and had the lowest documented dissolved oxygen of the summer, suggesting a dry weather urban runoff source. The dissolved oxygen sag was detected surface to bottom at 2.3 mg/L at a salinity of less than 1 part per thousand (ppt), mid-day, when oxygen levels should be high at the surface. The sloughs have a typical depth of 6 feet.

Board staff's investigations of these incidents, documented in a memorandum,⁶⁸ found that "storm water pump stations, universally operated by automatic float triggers, have been confirmed as the cause in at least one instance, and may represent an overlooked source of controllable pollution to the San Francisco Bay Estuary and its tidal sloughs. . . the discharges of dry weather urban runoff from these pump stations are not being

⁶⁸ Internal Water Board Memo dated December 2, 2005: "Dry Weather Urban Weather Urban Runoff Causing or Contributing to Water Quality Violations: Low Dissolved Oxygen (DO) in Old Alameda Creek and Alviso Slough"

managed to protect water quality, and [that] surveillance monitoring has detected measurable negative water quality consequences of this current state of pump station management.”

Pump station discharges of dry weather urban runoff can cause violations of water quality objectives. These discharges are controllable point sources of pollution that are virtually unregulated. The Water Board needs a complete inventory of dry weather urban runoff pump stations and to require BMP development and implementation for these discharges now. In the long term, Water Board staff should prioritize the sites from the regional inventory for dry weather diversion to sanitary sewers and encourage engineering feasibility studies to accomplish the diversions in a cost-effective manner. Structural treatment alternatives should be explored for specific pump stations.

To address the short term goals identified in the previous paragraph, Provision C.2.g. requires the Permittees to implement the following measures to reduce pollutant discharges to stormwater runoff from Permittee-owned or operated pump stations:

1. Establish an inventory of pump stations within each Permittee’s jurisdiction, including pump station locations and key characteristics, and inspection frequencies.
2. Inspect these pump stations regularly, but at least two times a year, to address water quality problems, including trash control and sediment and debris removal.
3. Inspect trash racks and oil absorbent booms at pump stations in the first business day after ¼-inch within 24 hours and larger storm events. Remove debris in trash racks and replace oil absorbent booms, as needed.

C.3. New Development and Redevelopment

Legal Authority

Broad Legal Authority: CWA Sections 402(p)(3)(B)(ii-iii), CWA Section 402(a), CWC Section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Fact Sheet Findings in Support of Provision C.3

- C.3-1** Urban development begins at the land use planning phase; therefore, this phase provides the greatest cost-effective opportunities to protect water quality in new development and redevelopment. When a Permittee incorporates policies and principles designed to safeguard water resources into its General Plan and development project approval processes, it has taken a critical step toward the preservation and most of local water resources for current and future generations.
- C.3-2** Provision C.3. is based on the assumption that Permittees are responsible for considering potential stormwater impacts when making planning and land use decisions. The goal of Provision C.3. is for Permittees to use their planning authority to include appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flow from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques. Neither Provision C.3. nor any of its requirements are intended to restrict or control local land use decision-making authority.
- C.3-3** Certain control measures implemented or required by Permittees for urban runoff management might create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative efforts among Permittees, local vector control agencies, Water Board staff, and the State Department of Public Health are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.
- C.3-4** The Water Board recognized in its Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control (Resolution No. 94-102) that urban runoff treatment wetlands that are constructed and operated pursuant to that Resolution and are constructed outside a creek or other receiving water are stormwater treatment systems and, as such, are not waters of the United States subject to regulation pursuant to Sections 401 or 404 of the federal Clean Water Act. Water Board staff is working with the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) to identify how maintenance for stormwater treatment controls required under permits such as this Permit can be appropriately streamlined, given CDFG and USFWS requirements, and particularly those that address special status species. This Permit requires Permittees to ensure that constructed wetlands installed by

Regulated Projects are consistent with Resolution No. 94-102 and the operation and maintenance requirements contained therein.

- C.3-5** The Permit requires Permittees to ensure that onsite, joint, and offsite stormwater treatment systems and HM controls installed by Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible parties for the treatment systems or HM controls have worked diligently and in good faith with the appropriate state and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment systems or HM controls, but these approvals are not granted, the Permittees shall be considered by the Water Board to be in compliance with Provision C.3.h.iii. of the Permit.

Specific Provision C.3 Requirements

Provision C.3.a. (New Development and Redevelopment Performance Standard Implementation) sets forth essentially the same legal authority, development review and permitting, environmental review, training, and outreach requirements that are contained in the existing permits. This Provision also requires the Permittees to encourage all projects not regulated by Provision C.3., but that are subject to the Permittees' planning, building, development, or other comparable review, to include adequate source control and site design measures, which include discharge of appropriate wastestreams to the sanitary sewer, subject to the local sanitary agency's authority and standards. Lastly, this Provision requires Permittees to revise, as necessary, their respective General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies. Adequate implementation time has been allocated to Provisions C.3.a.i.(6)-(8), which may be considered new requirements.

Provision C.3.b. (Regulated Projects) establishes the different categories of new development and redevelopment projects that Permittees must regulate under Provision C.3. These categories are defined on the basis of the land use and the amount of impervious surface created and/or replaced by the project because all impervious surfaces contribute pollutants to stormwater runoff and certain land uses contribute more pollutants. Impervious surfaces can neither absorb water nor remove pollutants as the natural, vegetated soil they replaced can. Also, urban development creates new pollution by bringing higher levels of car emissions that are aerially deposited, car maintenance wastes, pesticides, household hazardous wastes, pet wastes, and trash, which can all be washed into the storm sewer.

Provision C.3.b.ii.(1) lists Special Land Use Categories that are already regulated under the current stormwater permits. Therefore, extra time is not necessary for the Permittees to comply with this Provision, so the Permit Effective Date is set as the required implementation date. For these categories, the impervious surface threshold (for classification as a Regulated Project subject to Provision C.3.) will be decreased from the current 10,000 ft² to 5,000 ft² beginning two years from the Permit Effective Date. These special land use categories represent land use types

that may contribute more polluted stormwater runoff. Regulation of these special land use categories at the lower impervious threshold of 5,000 square feet is considered the maximum extent practicable and is consistent with State Board guidance, court decisions, and other Water Boards' requirements. In the precedential decision contained in its WQ Order No. 2000-11, the State Board upheld the SUSMP (Standard Urban Stormwater Mitigation Plan) requirements issued by the Los Angeles Water Board's Executive Officer on March 8, 2000, and found that they constitute MEP for addressing pollutant discharges resulting from Priority Development Projects. The State Board re-affirmed that SUSMP requirements constitute MEP in their Order WQ 2001-15. Provision C.3.b.ii.(1)'s requirement that development projects in the identified Special Land Use Categories adding and/or replacing > 5000 ft² of impervious surface shall install hydraulically sized stormwater treatment systems is consistent with the SUSMP provisions upheld by the State Board. Provision C.3.b.ii.(1) is also consistent with Order No. R9-2007-0001 issued by the San Diego Water Board, Order Nos. R4-2009-0057 and R4-2001-182 issued by the Los Angeles Water Board, Order No. 2009-0030 issued by the Santa Ana Water Board, and State Board's Order WQ 2003-0005 issued to Phase II MS4s. Under Order WQ 2003-0005, Phase II MS4s with populations of 50,000 and greater must apply the lower 5000 ft² threshold for requiring stormwater treatment systems by April 2008. The MRP allows two years from the MRP effective date for the Permittees to implement the lower 5000 ft² threshold for the special land use categories, three and half years later than the Phase II MS4s. However, the additional time is necessary for the Permittees to revise ordinances and permitting procedures and conduct training and outreach.

This Provision contains a "grandfathering" clause, which allows any private development project in a special land use category for which a planning application has been deemed complete by a Permittee on or before the Permit effective date to be exempted from the lower 5,000 square feet impervious surface threshold (for classification as a Regulated Project) as long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for the 5000 square feet threshold, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the lower 5000 square feet impervious surface threshold specified in Provision C.3.b.ii.(1).

For any private development project in a special land use category with an application deemed complete after the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011 for the 5000 square feet threshold.

Previous stormwater permits also used the “application deemed complete” date as the date for determining Provision C.3. applicability, but it was tied to the implementation date for new requirements and not the Permit effective date. The Permit Streamlining Act requires that a public agency must determine whether a permit application is complete within 30 days after receipt; if the public agency does not make this determination, the application is automatically deemed complete after 30 days. Data we have collected from audits and file reviews as well as reported to us by Permittees confirm that in many cases, the development permit applications have indeed not been reviewed for compliance with Provision C.3. requirements and yet have automatically been deemed complete 30 days after the application submittal date. As soon as the Permit is adopted, there is certainty about any new requirements that must be implemented during the Permit term. Therefore, the “application deemed complete” date should only be used to exempt projects that have reached this milestone by the Permit effective date and not years later at a new requirement’s implementation date. However, this change requires consideration of those applications that are deemed complete after the Permit effective date. Because there is certainty with regard to new requirements as soon as the Permit becomes effective, we have tied the “final discretionary approval” date to a new requirement’s implementation date for determining whether to exempt the projects with applications deemed complete after the Permit effective date. After a project receives “final discretionary approval” it would be too late in the permitting process to implement new requirements, particularly since this type of approval requires actions by city councils or boards of supervisors. Therefore, the “grandfathering” language is a hybrid that makes use of both the “application deemed complete” date and the “final discretionary approval” date, two known and recognized milestones in development planning.

As for private projects, public projects should be far enough along in the design and approval process to warrant being grandfathered and essentially exempted from complying with the lower 5000 ft² threshold when it becomes effective. Previous stormwater permits grandfathered projects that only had funds committed by the new threshold’s effective date, which was too early because projects can be held for years before design can begin, well after funding commitments have been made. Conversely, application of the grandfathering exemption to projects that have construction scheduled to begin by the threshold effective date (or 2 years after the MRP effective date) may be too late in the permitting process to implement new threshold requirements, particularly since this type of approval requires actions by city councils or boards of supervisors. Therefore, the Permit provides the grandfathering exemption for projects that have construction set to begin within 1 year of the threshold effective date (or 3 years after the MRP effective date).

Provisions C.3.b.ii.(2)-(3) describe land use categories that are already regulated under the current stormwater permits; therefore, extra time is not necessary for the Permittees to comply with these Provisions and the implementation date is the Permit effective date. Because the Vallejo Permittees do not have post-

construction requirements in their current stormwater permit, the Permit allows an extra year for them to comply with these Provisions.

Provision C.3.b.ii.(4) applies to road projects adding and/or replacing 10,000 ft² of impervious surface, which include the construction of new roads and sidewalks and bicycle lanes built as part of the new roads; widening of existing roads with additional traffic lanes; and construction of impervious trails that are greater than 10 feet wide or are creekside (within 50 feet of the top of bank). Although widening existing roads with bike lanes and sidewalks increases impervious surface and therefore increases stormwater pollutants because of aerial deposition, they have been excluded from this Provision because we recognize the greater benefit that bike lanes and sidewalks provide by encouraging less use of automobiles. Likewise, this Provision also contains specific exclusions for: sidewalks built as part of a new road and built to direct stormwater runoff to adjacent vegetated areas; bike lanes built as part of a new road but not hydraulically connected to the new road and built to direct stormwater runoff to adjacent vegetated areas; impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees; and sidewalks, bike lanes, or trails constructed with permeable surfaces.

In the case of road widening projects where additional lanes of traffic are added, the 50% rule also applies. That is, the addition of traffic lanes resulting in an alteration of more than 50 percent of the impervious surface of an existing street or road that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system must be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e., the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

Because road widening and trail projects belong to a newly added category of Regulated Projects, adequate implementation time has been included as well as “grandfathering” language. (See discussion under Provision C.3.b.ii.(1).)

Provision C.3.b.iii. requires that the Permittees cumulatively complete 10 pilot “green street” projects within the Permit term. This Provision was originally intended to require stormwater treatment for road rehabilitation projects on

arterial roads that added and/or replaced > 10,000 ft² of impervious surface. We acknowledge the logistical difficulties in retrofitting roads with stormwater treatment systems as well as the funding challenges facing municipalities in the Bay Area. However, we are aware that some cities have or will have funding for “green street” retrofit projects that will provide water quality benefits as well as meet broader community goals such as fostering unique and attractive streetscapes that protect and enhance neighborhood livability, serving to enhance pedestrian and bike access, and encouraging the planting of landscapes and vegetation that contribute to reductions in global warming. Therefore, instead of requiring post-construction treatment for all road rehabilitation of arterial streets, this Provision requires the completion of 10 pilot “green street” projects by the Permittees within the Permit term. These projects must incorporate LID techniques for site design and treatment in accordance with Provision C.3.c. and provide stormwater treatment pursuant to Provision C.3.d. and must be representative of the three different types of streets: arterial, collector, and local. To ensure equity and an even distribution of projects, at least two pilot projects must be located in each of the following counties: Alameda, Contra Costa, San Mateo, and Santa Clara. Parking lot projects are acceptable as pilot projects as long as both parking lot and street runoff is addressed. Because these are pilot projects, we have not specified a minimum or maximum size requirement and the details of which cities will have these projects are to be determined by the Permittees.

Provision C.3.c (Low Impact Development (LID)) recognizes LID as a cost-effective, beneficial, holistic, integrated stormwater management strategy⁶⁹. The goal of LID is to reduce runoff and mimic a site’s predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treat stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as preserving undeveloped open space, rain barrels and cisterns, green roofs, permeable pavement, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

This Provision sets forth a three-pronged approach to LID with source control, site design, and stormwater treatment requirements. The concepts and techniques for incorporating LID into development projects, particularly for site design, have been extensively discussed in BASMAA’s Start at the Source manual (1999) and its companion document, Using Site Design Techniques to Meet Development Standards for Stormwater Quality (May 2003), as well as in various other LID reference documents.

Provision C.3.c.i.(1) lists source control measures that must be included in all Regulated Projects as well as some that are applicable only to certain types of

⁶⁹ USEPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* (Publication Number EPA 841-F-07-006, December 2007) <http://www.epa.gov/owow/nps/lid/costs07>

businesses and facilities. These measures are recognized nationwide as basic, effective techniques to minimize the introduction of pollutants into stormwater runoff. The current stormwater permits also list these methods; however, they are encouraged rather than required. By requiring these source control measures, this Provision sets a consistent, achievable standard for all Regulated Projects and allows the Board to more systematically and fairly measure permit compliance. This Provision retains enough flexibility such that Regulated Projects are not forced to include measures inappropriate, or impracticable, to their projects. This Provision does not preclude Permittees from requiring additional measures that may be applicable and appropriate.

Provision C.3.c.i.(2)(a) lists site design elements that must be implemented at all Regulated Projects. These design elements are basic, effective techniques to minimize pollutant concentrations in stormwater runoff as well as the volume and frequency of discharge of the runoff. On the basis of the Board staff's review of the Permittees' Annual Reports and CWA section 401 certification projects, these measures are already being done at many projects. One design element requires all Regulated Projects to include at least one site design measure from a list of six which includes recycling of roof runoff, directing runoff into vegetated areas, and installation of permeable surfaces instead of traditional paving. All these measures serve to reduce the amount of runoff and its associated pollutants being discharged from the Regulated Project.

Provision C.3.c.i.(2)(b) requires each Regulated Project to treat 100% of the Provision C.3.d. runoff with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility. LID treatment measures are harvesting and re-use, infiltration, evapotranspiration, or biotreatment. A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site. Infeasibility may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
- Locations within 100 feet of a groundwater well used for drinking water.
- Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
- Locations with potential geotechnical hazards.
- Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- Locations with tight clay soils that significantly limit the infiltration of stormwater.

This Provision recognizes the benefits of harvesting and reuse, infiltration and evapotranspiration and establishes these methods at the top of the LID treatment hierarchy. This Provision also acknowledges the challenges, both institutional and technical, to providing these LID methods at all Regulated Projects. There

are certainly situations where biotreatment is a valid LID treatment measure and this Provision allows Permittees the flexibility to make this determination so that Regulated Projects are not forced to include measures inappropriate or impracticable to the project sites. However, Permittees are required to submit a report within 18 months of the Permit effective date and prior to the required implementation date on the criteria and procedures that Permittees will employ to determine when harvesting and re-use, infiltration, or evapotranspiration is feasible and infeasible at a Regulated Project site. The Permittees are also required to submit a second report two years after implementing the new LID requirements that documents their experience with determining the feasibility and infeasibility of harvesting and reuse, infiltration, and evapotranspiration at Regulated Project sites. This report shall also discuss barriers, including institutional and technical site specific constraints, to implementation of infiltration, harvesting and reuse, or evapotranspiration and proposed strategies for removing these identified barriers.

This Provision specifies minimum specifications for biotreatment systems to be considered as LID treatment and requires Permittees to develop soil media specifications. Because this Provision recognizes green roofs as biotreatment systems for roof runoff, it also requires Permittees to develop minimum specifications for green roofs.

Provision C.3.c.ii. establishes the implementation date for the new LID requirements of Provision C.3.c.i. to be two years after the Permit effective date. Grandfathering language consistent with Provision C.3.b.ii.(1) has been included in this Provision to exempt private development projects (that are far along in their permitting and approval process) and public projects (that are far along in their funding and design) from the requirements of Provision C.3.c.i.

Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) lists the hydraulic sizing design criteria that the stormwater treatment systems installed for Regulated Projects must meet. The volume and flow hydraulic design criteria are the same as those required in the current stormwater permits. These criteria ensure that stormwater treatment systems will be designed to treat the optimum amount of relatively smaller-sized runoff-generating storms each year. That is, the treatment systems will be sized to treat the majority of rainfall events generating polluted runoff but will not have to be sized to treat the few very large annual storms as well. For many projects, such large treatment systems become infeasible to incorporate into the projects. Provision C.3.d. also adds a new combined flow and volume hydraulic design criteria to accommodate those situations where a combination approach is deemed most efficient.

Provision C.3.d.iv. defines infiltration devices and establishes limits on the use of stormwater treatment systems that function primarily as infiltration devices. The intent of the Provision is to ensure that the use of infiltration devices, where feasible and safe from the standpoint of structural integrity, must also not cause or contribute to the degradation of groundwater quality at the project sites. This Provision requires infiltration devices to be located a minimum of 10 feet

(measured from the base) above the seasonal high groundwater mark and a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials, and other measures to ensure that any potential threat to the beneficial uses of ground water is appropriately evaluated and avoided.

Provision C.3.e (Alternative or In-Lieu Compliance with Provision C.3.c.) recognizes that not all Regulated Projects may be able to install LID treatment systems onsite because of site conditions, such as existing underground utilities, right-of-way constraints, and limited space.

Provision C.3.e.i. In keeping with LID concepts and strategies, we expect new development projects to provide LID treatment onsite and to allocate the appropriate space for these systems because they do not have the site limitations of redevelopment and infill site development in the urban core. However, this Provision does not restrict alternative compliance to redevelopment and infill projects because the Permittees have requested flexibility to make the determination of when alternative compliance is appropriate. Based on the lack of offsite alternative compliance projects installed during the current stormwater permit terms, it seems that having to find offsite projects is already a great disincentive. Therefore, this Provision allows any Regulated Project to provide LID treatment for up to 100% of the required Provision C.3.d. stormwater runoff at an offsite location or pay equivalent in-lieu fees to provide LID treatment at a Regional Project, as long as the offsite and Regional Projects are in the same watershed as the Regulated Project.

For the LID Treatment at an Offsite Location alternative compliance option, offsite projects must be constructed by the end of construction of the Regulated Project. We acknowledge that a longer timeframe may be required to complete construction of offsite projects because of administrative, legal, and/or construction delays. Therefore, up to 3 years additional time is allowed for construction of the offsite project; however, to offset the untreated stormwater runoff from the Regulated Project that occurs while construction of the offsite project is taking place, the offsite project must be sized to treat an additional 10% of the calculated equivalent quantity of both stormwater runoff and pollutant loading for each year that it is delayed. Permittees have commented that for projects that are delayed, requiring treatment of an additional (10-30)% of stormwater runoff may result in costly re-design of treatment systems. In those cases, payment of in-lieu fees to provide the additional treatment at a Regional Project is a viable alternative.

For the Payment of In-Lieu Fees to a Regional Project alternative compliance option, the Regional Project must be completed within 3 years after the end of construction of the Regulated Project. We acknowledge that a longer timeframe may be required to complete construction of Regional Projects because they may involve a variety of public agencies and stakeholder groups and a longer planning and construction phase. Therefore, the timeline for completion of a Regional Project may be extended, up to 5 years after the completion of the Regulated

Project, with prior Water Board Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

Provision C.3.e.ii. (Special Projects) When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less “accessory” impervious areas and auto-related pollutant impacts. Incentive LID treatment reduction credits approved by the Water Board may be applied to these types of Special Projects.

This Provision requires that by December 1, 2010, Permittees shall submit a proposal to the Water Board containing the following information:

- Identification of the types of projects proposed for consideration of LID treatment reduction credits and an estimate of the number and cumulative area of potential projects during the remaining term of this permit for each type of project..
- Identification of institutional barriers and/or technical site specific constraints to providing 100% LID treatment onsite that justify the allowance for non-LID treatment measures onsite.
- Specific criteria for each type of Special Project proposed, including size, location, minimum densities, minimum floor area ratios, or other appropriate limitations.
- Identification of specific water quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite.
- Proposed LID treatment reduction credit for each type of Special Project and justification for the proposed credits. The justification shall include identification and an estimate of the specific water quality benefit provided by each type of Special Project proposed for LID treatment reduction credit.
- Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

Provision C.3.f (Alternative Certification of Adherence to Numeric Sizing Criteria for Stormwater Treatment Systems) allows Permittees to have a third-party review and certify a Regulated Project’s compliance with the hydraulic design criteria in Provision C.3.d. Some municipalities do not have the staffing resources to perform these technical reviews. The third-party review option addresses this staffing issue. This Provision requires Permittees to make a reasonable effort to ensure that the third-party reviewer has no conflict of interest with regard to the Regulated Project being reviewed. That is, any consultant, contractor or their employees hired to design and/or construct a stormwater treatment system for a Regulated Project can not also be the certifying third party.

Provision C.3.g. (Hydromodification Management, HM) requires that certain new development projects manage increases in stormwater runoff flow and volume so that post-project runoff shall not exceed estimated pre-project runoff rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Background for Provision C.3.g. Based on Hydrograph Modification Management Plans prepared by the Permittees, the Water Board adopted hydromodification management (HM) requirements for Alameda Permittees (March 2007), Contra Costa Permittees (July 2006), Fairfield-Suisun Permittees (March 2007), Santa Clara Permittees (July 2005), and San Mateo Permittees (March 2007). Within Provision C.3.g, the major common elements of these HM requirements are restated. Attachments B–F contain the HM requirements as adopted by the Water Board, with some changes to correct minor errors and to provide consistency across the Region. Attachment F contains updated HM requirements for the Santa Clara Permittees. Permittees will continue to implement their adopted HM requirements; where Provision C.3.g. contradicts the Attachments, Provision C.3.g. shall be implemented. Additional requirements and/or options contained in the Attachments, above and beyond what is specified in Provision C.3.g., remain unaltered by Provision C.3.g. In all cases, the HM Standard must be achieved.

The Alameda, Santa Clara and San Mateo Permittees have adapted the Western Washington Hydrology Model⁷⁰ for modeling runoff from development project sites, sizing flow duration control structures, and determining overall compliance of such structures and other HM control structures (HM controls) in controlling runoff from the project sites to manage hydromodification impacts as described in the Permit. The adapted model is called the Bay Area Hydrology Model (BAHM).⁷¹ All Permittees may use the BAHM if its inputs reflect actual conditions at the project site and surrounding area, including receiving water conditions. As Permittees gain experience in designing and operating HM controls, the Programs may make adjustments in the BAHM to improve its function in controlling excess runoff and managing hydromodification impacts. Notification of all such changes shall be given to the Water Board and the public through such mechanism as an electronic email list.

The Contra Costa Permittees have developed sizing charts for the design of flow duration control devices. Attachment C requires the Contra Costa Permittees to conduct a monitoring program to verify the performance of these devices. Following the satisfactory conclusion of this monitoring program, or conclusion of other study(s) that demonstrate devices built according to Attachment C specifications satisfactorily protect streams from excess erosive flows, the Water Board intends to allow the use of the Contra Costa sizing charts, when tailored to local conditions, by other stormwater programs and Permittees. Similarly, any other control strategies or criteria approved by the Board would be made available across the Region. This would be accomplished

⁷⁰ http://www.ecy.wa.gov/programs/wq/stormwater/wwhm_training/wwhm/wwhm_v2/instructions_v2.html

⁷¹ See www.bayareahydrologymodel.org, Resources.

through Permit amendment or in another appropriate manner following appropriate public notification and process.

The Fairfield-Suisun Permittees have developed design procedures, criteria, and sizing factors for infiltration basins and bioretention units. These procedures, criteria, and sizing factors have been through the public review process already, and are not subject to public review at this time. Water Board staff's technical review found that the procedures, criteria, and sizing factors are acceptable in all ways except one: they are based on an allowable low flow rate that exceeds the criteria established in this Permit. Fairfield-Suisun Permittees may choose to change the design criteria and sizing factors to the allowable criterion of 20 percent of the 2-year peak flow, and seek Executive Officer approval of the modified sizing factors. This criterion, which is greater than the criterion allowed for other Bay Area Stormwater Countywide Programs, is based on data collected from Laurel and LedgeWood Creeks and technical analyses of these site-specific data. Following approval by the Executive Officer and notification of the public through such mechanism as an email list-serve, project proponents in the Fairfield-Suisun area may meet the HM Standard by using the Fairfield-Suisun Permittees' design procedures, criteria, and sizing factors for infiltration basins and/or bioretention units.

Attachments B and F allow the Alameda and Santa Clara Permittees to prepare a user guide to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This user guide would reiterate and collate established stream stability assessment methods that have been presented in these Programs' HMPs, which have undergone Water Board staff review and been made available for public review. After the Programs have collated their methods into user guide format, received approval of the user guide from the Executive Officer, and informed the public through such process as an email list-serve, the user guide may be used to guide preparation of technical reports for: implementing the HM standard using in-stream or regional measures; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in this Permit); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Q_{cp} ⁷² for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow).

The Water Board recognizes that the collective knowledge of management of erosive flows and durations from new and redevelopment is evolving, and that the topics listed below are appropriate topics for further study. Such a study may be initiated by Water Board staff, or the Executive Officer may request that all Bay Region municipal stormwater Permittees jointly conduct investigations as appropriate. Any future

⁷² Q_{cp} is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

proposed changes to the Permittees' HM provisions may reflect improved understanding of these issues:

- Potential incremental costs, and benefits to waterways, from controlling a range of flows up to the 35- or 50-year peak flow, versus controlling up to the 10-year peak flow, as required by this Permit;
- The allowable low-flow (also called Q_{cp} and currently specified as 10–20 percent of the pre-project 2-year runoff from the site) from HM controls;
- The effectiveness of self-retaining areas for management of post-project flows and durations; and/or
- The appropriate basis for determining cost-based impracticability of treating stormwater runoff and controlling excess runoff flows and durations.

Within Attachments B-F, this Permit allows for alternative HM compliance when on-site and regional HM controls and in-stream measures are not practicable. Alternative HM compliance includes contributing to or providing mitigation at other new or existing development projects that are not otherwise required by this Permit or other regulatory requirements to have HM controls. The Permit provides flexibility in the type, location, and timing of the mitigation measure. The Board recognizes that handling mitigation funds may be difficult for some municipalities because of administrative and legal constraints. The Board intends to allow flexibility for project proponents and/or Permittees to develop new or retrofit stormwater treatment or HM control projects within a broad area and reasonable time frame. Toward the end of the Permit term, the Board will review alternative projects and determine whether the impracticability criteria and options should be broadened or made narrower.

Provision C.3.g.i. defines the subset of Regulated Projects that must install hydromodification controls (HM controls). This subset, called HM Projects, are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded within Attachments B–F of the Permit. Within these Attachments, the Permittees have identified areas where the potential for single-project and/or cumulative development impacts to creeks is minimal, and thus HM controls are not required. Such areas include creeks that are concrete-lined or significantly hardened (e.g., with concrete) from point of discharge and continuously downstream to their outfall into San Francisco Bay; underground storm drains discharging to the Bay; and construction of infill projects in highly developed watersheds.⁷³

Provision C.3.g.ii. establishes the standard hydromodification controls must meet. The HM Standard is based largely on the standards proposed by Permittees in their Hydrograph Modification Management Plans. The method for calculating post-project runoff in regards to HM controls is standard practice in Washington State and is equally applicable in California.

⁷³ Within the context of Provision C.3.g., “highly developed watersheds; refer to catchments or sub-catchments that are 65 percent impervious or more.

Provision C.3.g.iii. identifies and defines three methods of hydromodification management.

Provision C.3.g.iv. sets forth the information on hydromodification management to be submitted in the Permittees' Annual Reports.

Provision C.3.g.v. requires the Vallejo Permittees to develop a Hydromodification Management Plan (HMP), because the Vallejo Permittees have not been required to address HM impacts to date. Vallejo's current permit was issued by USEPA and does not require the Vallejo Permittees' to develop an HMP. The Vallejo Permittees may choose to adopt and implement one or a combination of the approaches in Attachments B–F.

Provision C.3.h (Operation and Maintenance of Stormwater Treatment Systems) establishes permitting requirements to ensure that proper maintenance for the life of the project is provided for all onsite, joint, and offsite stormwater treatment systems installed. The Provision requires Permittees to inspect at least 20% of these systems annually, at least 20% of all vault-based systems annually, and every treatment system at least once every 5 years. Requiring inspection of at least 20% of the total number of treatment and HM controls serves to prevent failed or improperly maintained systems from going undetected until the 5th year. We have the additional requirement to inspect at least 20% of all installed vault-based systems because they require more frequent maintenance and problems arise when the appropriate maintenance schedules are not followed. Also, problems with vault systems may not be as readily identified by the projects' regular maintenance crews. Neither of these inspection frequency requirements interferes with the Permittees' current ability to prioritize their inspections based on factors such as types of maintenance agreements, owner or contractor maintained systems, maintenance history, etc. This Provision also requires the development of a database or equivalent tabular format to track the operation and maintenance inspections and any necessary enforcement actions against Regulated Projects and submittal of Reporting Table C.3.h., which requires standard information that should be collected on each operation and maintenance inspection. We require this type of information to evaluate a Permittee's inspection and enforcement program and to determine compliance with the Permit. Summary data alone without facility-specific inspection findings does not allow us to determine whether Permittees are doing timely follow-up inspections at problematic facilities and taking appropriate enforcement actions.

Stormwater treatment system maintenance has been identified as a critical aspect of addressing urban runoff from Regulated Projects by many prominent urban runoff authorities, including CASQA, which states that "long-term performance of BMPs [stormwater treatment systems] hinges on ongoing and proper maintenance."⁷⁴ USEPA also stresses the importance of BMP [stormwater treatment system] maintenance,

⁷⁴ California Stormwater Quality Association, 2003. Stormwater Best Management Practice Handbook – New Development and Redevelopment, p. 6-1.

stating that “Lack of maintenance often limits the effectiveness of stormwater structure controls such as detention/retention basins and infiltration devices.”⁷⁵

Provision C.3.i. (Required Site Design Measures for Small Project and Detached Single-Family Homes Projects) introduces new requirements on single-family home projects that create and/or replace 2500 square feet or more of impervious surface and small development projects that create and/or replace > 2500 ft² to <10,000 ft² impervious surface (collectively over the entire project). A detached single-family home project is defined as the building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

This Provision requires these projects to select and implement one or more stormwater site design measures from a list of six. These site design measures are basic methods to reduce the amount and flowrate of stormwater runoff from projects and provide some pollutant removal treatment of the runoff that does leave the projects. Under this Provision, only projects that already require approvals and/or permits under the Permittees’ current planning, building, or other comparable authority are regulated. Hence this Provision does not require Permittees to regulate small development and single-family home projects that would not otherwise be regulated under the Permittees’ current ordinances or authorities. Water Board staff recognizes that the stormwater runoff pollutant and volume contribution from each one of these projects may be small; however, the cumulative impacts could be significant. This Provision serves to address some of these cumulative impacts in a simple way that will not be too administratively burdensome on the Permittees. To assist these small development and single-family home projects, this Provision also requires the Permittees to develop standard specifications for lot-scale site design and treatment measures.

⁷⁵ USEPA. 1992. *Guidance Manual for the Preparation of Part II of the NPDES Permit Application for Discharges from Municipal Separate Storm Sewer Systems*. EPA 833-B-92-002.

C.4. Industrial and Commercial Site Controls

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C) requires, “A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system.”

Specific Provision C.4. Requirements

Provision C.4.a (Legal Authority for Effective Site Management)

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.” This section also describes requirements for effective follow-up and resolution of actual or threatened discharges of either polluted non-stormwater or polluted stormwater runoff from industrial/commercial sites.

Provision C.4.b (Inspection Plan)

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that Permittees must “identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.” The Permit requires Permittees to implement an industrial and commercial site controls program to reduce pollutants in runoff from all industrial and commercial sites/sources.

Provision C.4.b.ii.(1) (Commercial and Industrial Source Identification)

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that Permittees “Provide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity.”

USEPA requires “measures to reduce pollutants in storm water discharges to municipal separate storm sewers from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of

1986 (SARA).”⁷⁶ USEPA “also requires the municipal storm sewer Permittees to describe a program to address industrial dischargers that are covered under the municipal storm sewer permit.”⁷⁷ To more closely follow USEPA’s guidance, this Permit also includes operating and closed landfills, and hazardous waste treatment, disposal, storage and recovery facilities.

The Permit requires Permittees to identify various industrial sites and sources subject to the General Industrial Permit or other individual NPDES permit. USEPA supports the municipalities regulating industrial sites and sources that are already covered by an NPDES permit:

Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system’s discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system. It is anticipated that general or individual permits covering industrial storm water discharges to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well as other terms specific to the Permittee.⁷⁸

And:

Although today’s rule will require industrial discharges through municipal storm sewers to be covered by separate permit, USEPA still believes that municipal operators of large and medium municipal systems have an important role in source identification and the development of pollutant controls for industries that discharge storm water through municipal separate storm sewer systems is appropriate. Under the CWA, large and medium municipalities are responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program.⁷⁹

Provision C.4.b.ii.(5) (Inspection Frequency)

USEPA guidance⁸⁰ says, “management programs should address minimum frequency for routine inspections.” The USEPA Fact Sheet—Visual Inspection⁸¹ says, “To be effective, inspections must be carried out routinely.”

⁷⁶ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. P. 48056.

⁷⁷ *Ibid*.

⁷⁸ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48006.

⁷⁹ *Ibid*. P. 48000

⁸⁰ USEPA. 1992. Guidance 833-8-92-002, section 6.3.3.4 “Inspection and Monitoring”.

⁸¹ USEPA. 1999. 832-F-99-046, “Storm Water Management Fact Sheet – Visual Inspection”.

Provision C.4.c (Enforcement Response Plan) requires the Permittees to establish an Enforcement Response Plan (ERP) that ensures timely response to actual or potential stormwater pollution problems discovered in the course of industrial/commercial stormwater inspections. The ERP also provides for progressive enforcement of violations of ordinances and/or other legal authorities. The ERP will provide guidance on the appropriate use of the various enforcement tools, such as verbal and written notices of violation, when to issue a citations, and require cleanup requirements, cost recovery, and pursue administrative or and criminal penalties. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered.

Provision C.4.d (Staff Training) section of the Permit requires the Permittees to conduct annual staff trainings for inspectors. Trainings are necessary to keep inspectors current on enforcement policies and current MEP BMPs for industrial and commercial stormwater runoff discharges.

C.5. Illicit Discharge Detection and Elimination

Legal Authority

The following legal authority applies to section C.5:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) provides that the Permittee shall include in their application, “the location of known municipal storm sewer system outfalls discharging to waters of the United States.”

Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(5) provides that the Permittee shall include in their application, “The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall have, “adequate legal authority to prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall, “Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires, “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires, “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires, “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) requires, “a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) requires, “a description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.”

Fact Sheet Findings in Support of Provision C.5

- C.5-1** Illicit and inadvertent connections to MS4 systems result in the discharge of waste and chemical pollutants to receiving waters. Every Permittee must have the ability to discover, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.
- C.5-2** Illicit discharges to the storm drain system can be detected in several ways. Permittee staff can detect discharges during their course of other tasks, and business owners and other aware citizens can observe and report suspect discharges. The Permittee must have a direct means for these reports of suspected polluted discharges to receive adequate documentation, tracking, and response through problem resolution.

Specific Provision C.5 Requirements

Provision C.5.a (Legal Authority) requires each Permittee have adequate legal authority to effectuate cessation, abatement, and/or clean up of non-exempt non-stormwater discharges per Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B). Illicit and inadvertent connections to MS4 systems result in the discharge of waste and chemical pollutants to receiving waters. Every Permittee must have the ability to discover, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

Provision C.5.b (ERP) requires Permittees to establish an ERP that ensures timely response to illicit discharges and connections to the MS4 and provides progressive enforcement of violations of ordinances and/or other legal authorities. This section also requires Permittees to establish criteria for triggering follow-up investigations. Additional language has been added to this section to clarify the minimum level of effort and time frames for follow-up investigations when violations are discovered. Timely investigation and follow up when action levels are exceeded is necessary to identify sources of illicit discharges, especially since many of the discharges are transitory. The requirements for all violations to be corrected before the next rain event but no longer than 10 business days when there is evidence of illegal non-stormwater discharge, dumping, or illicit connections having reached municipal storm drains is necessary to ensure timely response by Permittees.

Provision C.5.c (Spill and Dumping Response, Complaint Response, and Frequency of Inspections) Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.” This Provision of the Permit requires the Permittees to establish and maintain a central point of contact including phone numbers for spill and complaint reporting. Reports from the public are an essential tool in discovering and investigating illicit discharge activities. Maintaining contact points will help ensure that there is effective reporting to assist with the discovery of prohibited discharges. Each Permittee must have a direct means for these reports of suspected polluted discharges to receive adequate documentation, tracking, and response through problem resolution.

Provision C.5.d (Control of Mobile Sources) requires each Permittee to develop and implement a program to reduce the discharge of pollutants from mobile businesses. The purpose of this section is to establish oversight and control of pollutants associated with mobile business sources to the MEP.

Provision C.5.e (Collection System Screening and MS4 Map Availability) Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.” This Provision of the Permit requires the Permittees to conduct follow up investigations and inspect portions of the MS4 for illicit discharges and connections. Permittees shall implement a program to actively seek and eliminate illicit connections and discharges during their routine collection system screening and during screening surveys at strategic check points. Additional wording has been added to this section to clarify and ensure that all appropriate municipal personnel are used in the program to observe and report these illicit discharges and connections when they are working the system.

This section also requires the Permittees to develop or obtain a map of their entire MS4 system and drainages within their jurisdictions and provide the map to the public for review. As part of the permit application process federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) and 40 CFR 122.26(d)(1)(iii)(B)(5) specify that dischargers must identify the location of any major outfall that discharges to waters of the United States, as well as the location of major structural controls for stormwater discharges. A major outfall is any outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) or; for areas zoned for industrial activities, any pipe with a diameter of 12 inches or more or its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). The permitting agency may not process a permit until the applicant has fully complied with the application requirements.⁸² If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.⁸³ The requirement in this Provision of the Permit for

⁸² 40 CFR 124.3 (applicable to state programs, see section 123.25).

⁸³ 40 CFR. 122.26(d)(1)(iv)(E).

Permittees to prepare maps of the MS4 system will help ensure that Permittees comply with federal NPDES permit application requirements that are more than 10 years old.

Provision C.5.f (Tracking and Case Follow-up) section of the Permit requires Permittees to track and monitor follow-up for all incidents and discharges reported to the complaint/spill response system that could pose a threat to water quality. This requirement is included so Permittees can demonstrate compliance with the ERP requirements of Section C.5.b and to ensure that illicit discharge reports receive adequate follow up through to resolution.

C.6. Construction Site Control

Legal Authority

The following legal authority applies to section C.6:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D) requires, “A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) requires, “A description of procedures for site planning which incorporate consideration of potential water quality impacts.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) requires, “A description of requirements for nonstructural and structural best management practices.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) requires, “A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) requires, “A description of appropriate educational and training measures for construction site operators.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control, “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.”

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that, “The following categories of facilities are considered to be engaging in ‘industrial activity’ for the purposes of this subsection: [...] (x) Construction activity including cleaning, grading and excavation activities [...].”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to, “control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute

to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Fact Sheet Findings in Support of Provision C.6.

- C.6-1** Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters.
- C.6-2** Excess sediment can cloud the water, reducing the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants such as nutrients, metals, and oils and grease. Permittees are on-site at local construction sites for grading and building permit inspections, and also have in many cases dedicated construction stormwater inspectors with training in verifying that effective BMPs are in place and maintained. Permittees also have effective tools available to achieve compliance with adequate erosion control, such as *stop work* orders and citations.
- C.6-3** Mobilized sediment from construction sites can flow into receiving waters. According to the 2004 National Water Quality Inventory⁸⁴, States and Tribes report that sediment is one of the top 10 causes of impairment of assessed rivers and streams, next to pathogens, habitat alteration, organic enrichment or oxygen depletion, nutrients, metals, etc.. Sediment impairs 35,177 river and stream miles (14% of the impaired river and stream miles). Sources of sedimentation include agriculture, urban runoff, construction, and forestry. Sediment runoff rates from construction sites, however, are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades.⁸⁵

Specific Provision C.6 Requirements

Provision C.6.a. Legal Authority for Effective Site Management. Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) requires that each Permittee demonstrate that it can control “through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity.” This section of the Permit requires each Permittee to have the

⁸⁴ http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

⁸⁵ USEPA. December 2005. *Stormwater Phase II Final Rule Fact Sheet Series – Construction Site Runoff Control Minimum Control Measure*. EPA 833-F-00-008. Fact Sheet 2.6.

authority to require year-round, seasonally and phase appropriate effective erosion control, run-on and runoff control, sediment control, active treatment systems, good site management, and non stormwater management through all phases of site grading, building, and finishing of lots. All Permittees should already have this authority. Permittees shall certify adequacy of their respective legal authority in the 2010 Annual Report.

Inspectors should have the authority to take immediate enforcement actions when appropriate. Immediate enforcement will get the construction site's owner/operator to quickly implement corrections to violations, thereby minimizing and preventing threats to water quality. When inspectors are unable to take immediate enforcement actions, the threat to water quality continues until an enforcement incentive is issued to correct the violation. In its Phase II Compliance Assistance Guidance, USEPA says that, "Inspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties."⁸⁶ To issue warnings and assess penalties during inspections, inspectors must have the legal authority to conduct enforcement.

Provision C.6.b. Enforcement Response Plan (ERP). This section requires each Permittee to develop and implement an escalating enforcement process that serves as reference for inspection staff to take consistent actions to achieve timely and effective corrective compliance from all public and private construction site owners/operators. Under this section, each Permittee develops its own unique ERP tailored for the specific jurisdiction; but all ERPs must make it a goal to correct all violations before the next rain event but no longer than 10 business days after the violations are discovered. In a few cases, such as slope inaccessibility, it may require longer than 10 days before crews can safely access the eroded area. The Permittees' tracking data need to provide a rationale for the longer compliance timeframe.

Water Board staff has noted deficiencies in the Permittees' enforcement procedures and implementation during inspections. The most common issues found were that enforcement was not firm and appropriate to correct the violation, and that repeat violations did not result in escalated enforcement procedures. USEPA supports enforcement of ordinances and permits at construction sites stating, "Effective inspection and enforcement requires [...] penalties to deter infractions and intervention by the municipal authority to correct violations."⁸⁷ In addition, USEPA expects permits issued to municipalities to address "weak inspection and enforcement."⁸⁸ For these reasons, the enforcement requirements in this section have been established, while providing sufficient flexibility for each Permittee's unique stormwater program.

Provision C.6.c. Best Management Practices Categories. This section requires all Permittees to require all construction sites to have year-round seasonally appropriate effective Best Management Practices (BMPs) in the following six categories: (1)

⁸⁶ USEPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, P.4-31

⁸⁷ USEPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.

⁸⁸ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48058.

erosion control, (2) run-on and runoff control, (3) sediment control, (4) active treatment systems, (5) good site management, and (6) non stormwater management. These BMP categories are listed in the State General NPDES Permit for Stormwater Discharges Associated with Construction Activities (General Construction Permit). The Water Board staff decided it was too prescriptive and inappropriate to require a specific set of BMPs that are to be applicable to all sites. Every site is different with regards to terrain, soil type, soil disturbance, and proximity to a waterbody. The General Construction Permit recognizes these different factors and requires site specific BMPs through the Storm Water Pollution Prevention Plan that addresses the six specified BMP categories. This Permit allows Permittees the flexibility to determine if the BMPs for each construction site are effective and appropriate. This Permit also allows the Permittees and the project proponents the necessary flexibility to make immediate decisions on appropriate, cutting-edge technology to prevent the discharge of construction pollutants into stormdrains, waterways, and right-of-ways. Appropriate BMPs for the different site conditions can be found in different handbooks and manuals. Therefore, this Permit is consistent with the General Construction Permit in its requirements for BMPs in the six specified categories.

Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. This can even occur in conjunction with unexpected rain events during the so-called *dry-season*. Although rare, significant rains can occur in the San Francisco Bay Region during the dry season. Therefore, Permittees should ensure that construction sites have materials on hand for rapid rain response during the dry season.

Normally, stormwater restrictions on grading should be implemented during the wet season from October 1st through April 30th. Section C.6.c.ii.(1).d of the Permit requires, “project proponents to minimize grading during the wet season and scheduling of grading with seasonal dry weather periods to the extent feasible.” If grading does occur during the wet season, Permittees shall require project proponents to (1) implement additional BMPs as necessary, (2) keep supplies available for rapid response to storm events, and (3) minimize wet-season, exposed, and graded areas to the absolute minimum necessary.

Slope stabilization is necessary on all active and inactive slopes during rain events regardless of the season, except in areas implementing advanced treatment. Slope stabilization is also required on inactive slopes throughout the rainy season. These requirements are needed because unstabilized slopes at construction sites are significant sources of erosion and sediment discharges during rainstorms. “Steep slopes are the most highly erodible surface of a construction site, and require special attention.”⁸⁹ USEPA emphasizes the importance of slope stabilization when it states, “slope length

⁸⁹ Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out?* The Practice of Watershed Protection. p. 6.

and steepness are key influences on both the volume and velocity of surface runoff. Long slopes deliver more runoff to the base of slopes and steep slopes increase runoff velocity; both conditions enhance the potential for erosion to occur.”⁹⁰ In lieu of vegetation preservation or replanting, soil stabilization is the most effective measure in preventing erosion on slopes. Research has shown that effective soil stabilization can reduce sediment discharge concentrations up to six times, as compared to soils without stabilization.⁹¹ Slope stabilization at construction sites for erosion control is already the consensus among the regulatory community and is found throughout construction BMP manuals and permits. For these reasons, Permittees must ensure that slope stabilization is implemented on sites, as appropriate.

It is also necessary that Permittees ensure that construction sites are revegetated as early as feasible. Implementation of revegetation reduces the threat of polluted stormwater discharges from construction sites. Construction sites should permanently stabilize disturbed soils with vegetation at the conclusion of each phase of construction.⁹² A survey of grading and clearing programs found one-third of the programs without a time limit for permanent revegetation, “thereby increasing the chances for soil erosion to occur.”⁹³ USEPA states “the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development.”⁹⁴

To ensure the MEP standard and water quality standards are met, advanced treatment systems may be necessary at some construction sites. In requiring the implementation of advanced treatment for sediment at construction sites, Permittees should consider the site’s threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: (1) soil erosion potential; (2) the site’s slopes; (3) project size and type; (4) sensitivity of receiving waterbodies; (5) proximity to receiving waterbodies; (6) non-stormwater discharges; and (7) any other relevant factors. Advanced treatment is a treatment system that employs chemical coagulation, chemical flocculation, or electro coagulation in order to reduce turbidity caused by fine suspended sediment.⁹⁵ Advanced treatment consists of a three part treatment train of coagulation, sedimentation, and polishing filtration. Advanced treatment has been effectively implemented extensively in the other states and in the Central Valley Region of California.⁹⁶ In addition, Water Board’s inspectors have observed advanced treatment being effectively implemented at both large sites greater than 100 acres, and at small, 5-acre sites. Advanced treatment is often necessary for Permittees to ensure that discharges from construction sites are not causing or contributing to a violation of water quality standards.

⁹⁰ USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

⁹¹ Schueler, T., and H. Holland. 2000. “Muddy Water In—Muddy Water Out?” *The Practice of Watershed Protection*. p. 5.

⁹² Ibid.

⁹³ Ibid. p. 11.

⁹⁴ USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

⁹⁵ SWCRB. September 2, 2009. *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities – Order No. 2009-0009-DWQ*.

⁹⁶ SWRCB. 2004. Conference on Advanced Treatment at Construction Sites.

Provision C.6.d. Plan Approval Process. This section of the Permit requires the Permittees to review project proponents' stormwater management plans for compliance with local regulations, policies, and procedures. USEPA states that it is often easier and more effective to incorporate stormwater quality controls during the site plan review process or earlier.⁹⁷ In the Phase I stormwater regulations, USEPA states that a primary control technique is good site planning.⁹⁸ USEPA goes on to say that the most efficient controls result when a comprehensive stormwater management system is in place.⁹⁹ To determine if a construction site is in compliance with construction and grading ordinances and permits, USEPA states that the "MS4 operator should review the site plans submitted by the construction site operator before ground is broken."¹⁰⁰ Site plan review aids in compliance and enforcement efforts since it alerts the "MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities."¹⁰¹

Provision C.6.e. (Inspections) The Water Board allows flexibility on the exact legal authority language, ERP, and BMPs required on a site. This section of the Permit pulls together the accountability of the whole Provision through regular inspections, consistent enforcement, and meaningful tracking. These three elements will help ensure that effective construction pollutant controls are in place in order to minimize construction polluted runoff to the stormdrain and waterbodies.

Currently, Annual Reports show that some Permittees provide no information on its construction inspection and enforcement programs; some Permittees only provide information on pre rainy season inspections; another group of Permittees conduct inspections through December and provide just the date each site was inspected; yet another group of Permittees provides a very brief summary of their respective overall inspection program; and there is a small group of Permittees who report meaningful inspection and enforcement information. Inspections of construction sites by Water Board staff have noted deficiencies in stormwater inspections and enforcement. Therefore, this section clearly identifies the level of effort necessary by all Permittees to minimize construction pollutant runoff into stormdrains and ultimately, waterbodies.

This section requires monthly inspections during the wet season of all construction sites disturbing one or more acre of land and at all high priority sites as determined by the Permittee or the Water Board as significant threats to water quality. Inspections shall focus on the adequacy and effectiveness of the site specific BMPs implemented for the six BMP categories. Permittees shall implement its ERP and require timely corrections of all actual and potential problems observed. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer

⁹⁷ USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 6.3.2.1.

⁹⁸ *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.

⁹⁹ *Ibid*.

¹⁰⁰ USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4-30.

¹⁰¹ *Ibid*. pp. 4-31.

than 10 business days after the violations are discovered. All inspections shall be recorded on a written or electronic inspection form, and also tracked in an electronic database or tabular format. The tracked information provides meaningful data for evaluating compliance. An example tabular format is included as Table 6 – Construction Inspection Data. Submittal of this Table is not required in each Annual Report but encouraged. Each Permittee will need to use the information in the electronic database or tabular format to compile its Annual Reports. The Executive Officer may require that the tracked information be submitted electronically or in a tabular format. When required, Permittees shall submit that data within 10-working days of the requirement. The recommended submittal format is in Table 6 – Construction Inspection Data.

Provision C.6.f. Staff Training. This section of the Permit requires Permittees to conduct annual staff trainings for municipal staff. These trainings have been found to be extremely effective means to educate inspectors and to inform them of any changes to local ordinances and state laws. Trainings provide valuable opportunity for Permittees to network and share strategies used for effective enforcement and management of erosion control practices.

Table 6 – Construction Inspection Data

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Run-on and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	9/30/08	Dry	0	Written Notice			x					Driveway not stabilized				
Panoramic Views	10/15/08	Dry	0.5										x			50' of driveway rocked.
Panoramic Views	11/15/08	Rain	3	Stop Work	x		x					Uncovered graded lots eroding; Sediment entering a stormdrain that didn't have adequate protection.				
Panoramic Views	11/15/08	Drizzling	0.25										x			Lots blanketed. Storm drains pumped. Street cleaned.
Panoramic Views	12/1/08	Dry	4	Verbal Warning					x			Porta potty next to stormdrain.	x			Porta potty moved away from stormdrain.
Panoramic Views	1/15/08	Rain	3.25	Written Warning	x						x	Fiber rolls need maintenance; Tire wash water flowing into street				
Panoramic Views	1/25/09	Dry	0										x			Fiber rolls replaced.

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed						Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time	
					Erosion Control	Run-on and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management		Illicit Discharge	Problems Fixed	Need More Time		Escalate Enforcement
Panoramic Views	2/28/09	Rain	2.4	Stop Work	x		x					Slope erosion control failed. Fiber rolls at the bottom of the hill flattened. Sediment laden discharge skipping protected stormdrains and entering unprotected stormdrains.				
Panoramic Views	2/28/09	Rain	0.1										x			Fiber rolls replaced. Silt fences added. More stormdrains protected. Streets cleaned. Slope too soggy to access.
Panoramic Views	3/15/09	Dry	1	Citation with Fine					x		x	Paint brush washing not designated	x			Street and storm drains cleaned. Slopes blanketed.
Panoramic Views	4/1/09	Dry	0.5	Citation with Fine							x	Concrete washout overflowed; Evidence of illicit discharge				
Panoramic Views	4/15/09	Dry	0										x			Concrete washout replaced; Storm drain and line cleaned.

C.7. Public Information and Outreach

Legal Authority

The following legal authority applies to section C.7:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires, “A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(5) requires, “a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) requires, “A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

Fact Sheet Finding in Support of Provision C.7.

- C.7-1** An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues.
- C.7-2** An informed community also ensures greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.
- C.7-3** The public education programs should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.¹⁰²

¹⁰² USEPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

C.7-4 Target audiences should include (1) government agencies and officials to achieve better communication, consistency, collaboration, and coordination at the federal, state, and local levels and (2) K-12/Youth Groups.¹⁰³

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.¹⁰⁴

Specific Provision C.7 Requirements

Provision C.7.a. Storm Drain Inlet Marking. Storm drain inlet marking is a long-established program of outreach to the public on the nature of the storm drain system, providing the information that the storm drain system connects directly to creeks and the Bay and does not receive treatment. Past public awareness surveys have demonstrated that this BMP has achieved significant impact in raising awareness in the general public and meets the MEP standard as a required action. Therefore, it is important to set a goal of ensuring that all municipally-maintained inlets are legible labeled with a no dumping message. If storm drain marking can be conducted as a volunteer activity, it has additional public involvement value.

Provision C.7.b. Advertising Campaigns. Use of various electronic and/or print media on trash/litter in waterways and pesticides. Advertising campaigns are long-established outreach management practices. Specifically, the Bay Area Management Agencies Association (BASMAA) already implements an advertising campaign on behalf of the Permittees. While the Permittees have been successful at reaching certain goals for its Public Information/Participation programs, it must continue to increase public awareness of specific stormwater issues. This Permit also requires a pre-campaign survey and a post-campaign survey. These two surveys will help identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population awareness of the messages and behavioral changes.

Provision C.7.c. Media Relations. Public service media time is available and allows the Permittees to leverage expensive media purchases to achieve broader outreach goals.

Provision C.7.d. Stormwater Point of Contact. As the public has become more aware, citizens are more frequently calling their local jurisdictions to report spills and other polluting behavior impacting stormwater runoff and causing non-stormwater prohibited discharges. Permittees are required to have a centralized, easily accessible point of contact both for citizen reports and to coordinate reports of problems identified by Permittee staff, permitting follow-up and pollution cleanup or prevention. Often the follow-up, cleanup, and/or prevention provide the opportunity to educate the immediate neighborhood through established public outreach mechanisms such as distributing door hangers in the neighborhood describing the remedy for the problem discovered. Permittees already have existing published stormwater point of contacts.

¹⁰³ State Water Board. 1994. Urban Runoff Technical Advisory Committee Report and Recommendations. Nonpoint Source Management Program.

¹⁰⁴ USEPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

Provision C.7.e. Public Outreach Events. Staffing tables or booths at fairs, street fairs or other community events are a long-established outreach mechanism employed by Permittees to reach large numbers of citizens with stormwater pollution prevention information in an efficient and convenient manner. These have been ongoing in the Region for several municipal stormwater permit cycles and are MEP outreach actions. Permittees shall continue with such outreach events utilizing appropriate outreach materials, such as printed materials, newsletter/journal articles, and videos. Permittees shall also utilize existing community outreach events such as the Bringing Back the Natives Garden Tour.

Provision C.7.f. Watershed Stewardship Collaborative Efforts. Watershed and Creek groups are comprised of active citizens, but they often need support from the local jurisdiction and certainly need to coordinate actions with Permittees such as flood districts and cities.

Provision C.7.g. Citizen Involvement Events. Citizen involvement and volunteer efforts both accomplish needed creek cleanups and restorations, and serve to raise awareness and provide outreach opportunities. These have been ongoing in the Region for several municipal stormwater permit cycles and are MEP outreach actions.

In previous municipal stormwater permits, Public Information/Participation encompassed both Citizen Involvement Events and Public Outreach Events. Citizen Involvement Events are important because they provide the community opportunities to actively practice being good stewards of our environment. Therefore, this Permit separates out the Public Outreach Events from the Citizen Involvement Events to ensure that citizens in all Bay Area communities are given the opportunity to be involved. In addition, the Permit allows Permittees to claim both Public Outreach and Citizen Involvement credits if the event contains significant elements of both. The combined specified number of events for Public Outreach and Citizen Involvement are very close to current performance standards and/or level of effort for respective Public Information/Participation Programs.

Provision C.7.h. School-Age Children Outreach. Outreach to school children has proven to be a particularly successful program with an enthusiastic audience who are efficient to reach. School children also take the message home to their parents, neighbors, and friends. In addition, they are the next generation of decision makers and consumers.

Provision C.7.i. Outreach to Municipal Officials. It is important for Permittee staff to periodically inform Municipal Officials of the permit requirements and also future planning and resource needs driven by the permit and stormwater regulations.

C.8. Water Quality Monitoring

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii); CWC section 13377; Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)

Specific Legal Authority: Permittees must conduct a comprehensive monitoring program as required under Federal NPDES regulations 40 CFR 122.48, 40 CFR 122.44(i), 40 CFR 122.26.(d)(1)(iv)(D), and 40 CFR 122.26(d)(2)(ii)-(iv).

Fact Sheet Findings in Support of Provision C.8

C.8-1 In response to questions regarding the type of water quality-based effluent limitations that are most appropriate for NPDES stormwater permits, and because of the nature of stormwater discharges, USEPA established the following approach to stormwater monitoring:

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.¹⁰⁵

According to USEPA, the benefits of stormwater runoff monitoring include, but are not limited to, the following:

- Providing a means for evaluating the environmental risk of stormwater discharges by identifying types and amounts of pollutants present;
- Determining the relative potential for stormwater discharges to contribute to water quality impacts or water quality standard violations;
- Identifying potential sources of pollutants; and
- Eliminating or controlling identified sources more specifically through permit conditions.¹⁰⁶

C.8-2 Provision C.8 requires Permittees to conduct water quality monitoring, including monitoring of receiving waters, in accordance with 40 CFR 122.44(i) and 122.48. One purpose of water quality monitoring is to demonstrate the effectiveness of the Permittees' stormwater management

¹⁰⁵ USEPA. 1996. Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits. Sept. 1, 1996. <http://www.epa.gov/npdes/pubs/swpol.pdf>

¹⁰⁶ USEPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

actions pursuant to this Permit and, accordingly, demonstrate compliance with the conditions of the Permit. Other water quality monitoring objectives under this Permit include:

- Assess the chemical, physical, and biological impacts of urban runoff on receiving waters;
- Characterize stormwater discharges;
- Assess compliance with Total Maximum Daily Loads (TMDLs) and Wasteload Allocations (WLAs) in impaired waterbodies;
- Assess progress toward reducing receiving water concentrations of impairing pollutants;
- Assess compliance with numeric and narrative water quality objectives and standards;
- Identify sources of pollutants;
- Assess stream channel function and condition, as related to urban stormwater discharges;
- Assess the overall health and evaluate long-term trends in receiving water quality; and
- Measure and improve the effectiveness of the Permittees' urban runoff control programs and the Permittees' implemented BMPs.

C.8-3 Monitoring programs are an essential element in the improvement of urban runoff management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach, also called the “continuous improvement” approach, used to meet the MEP standard. When water quality data indicate that water quality standards or objectives are not being met, particular pollutants, sources, and drainage areas can be identified and targeted for urban runoff management efforts. The iterative process in Provision C.1, Water Quality Standards Exceedances, could potentially be triggered by monitoring results. Ultimately, the results of the monitoring program must be used to focus actions to reduce pollutant loadings to comply with applicable WLAs, and protect and enhance the beneficial uses of the receiving waters in the Permittees' jurisdictions and the San Francisco Bay.

C.8-4 Water quality monitoring requirements in previous permits were less detailed than the requirements in this Permit. Under previous permits, each program could design its own monitoring program, with few permit guidelines. A decision by the California Superior Court¹⁰⁷ regarding two of the programs' permits stated:

Federal law requires that all NPDES permits specify “[r]equired monitoring including type, intervals, and frequency sufficient to yield

¹⁰⁷ San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Consolidated Case No. 500527, filed Nov. 14, 2003.

data which are representative of the monitored activity.” 40 C.F.R. § 122.48(b). Here, there is no monitoring program set forth in the Permit. Instead, an annual Monitoring Program Plan is to be prepared by the dischargers to set forth the monitoring program that will be used to demonstrate the effectiveness of the Stormwater Management Plan. This does not meet the regulatory requirements that a monitoring program be set forth including the types, intervals, and frequencies of the monitoring.

The water quality monitoring requirements in Provision C.8 comply with 40 CFR 122.44(i) and 122.48(b), and the Superior Court decision.

C.8-5 The Water Quality Monitoring Provision is intended to provide answers to five fundamental management questions, outlined below. Monitoring is intended to progress as iterative steps toward ensuring that the Permittees’ can fully answer, through progressive monitoring actions, each of the five management questions:

- Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
- What is the extent and magnitude of the current or potential receiving water problems?
- What is the relative urban runoff contribution to the receiving water problem(s)?
- What are the sources of urban runoff that contribute to receiving water problem(s)?
- Are conditions in receiving waters getting better or worse?

C.8-6 On April 15, 1992, the Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in the Region, under authority of CWC section 13267, to report on the water quality of the Estuary. These permit holders, including the Permittees, responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP). The RMP involves collection and analysis of data on pollutants and toxicity in water, sediment and biota of the Estuary. The Permittees are required to continue to report on the water quality of the Estuary, as presently required. Compliance with the requirement through participation in the RMP is considered to be adequate compliance.

C.8-7 The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout California. One purpose of SWAMP is to integrate existing water quality monitoring activities of the State Water Board and the Regional Water Quality Control Boards, and to coordinate with other monitoring programs. Provision C.8 contains a

framework, referred to as a regional monitoring collaborative, within which Permittees can elect to work cooperatively with SWAMP to maximize the value and utility of both the Permittees' and SWAMP's monitoring resources.

- C.8-8** In 1998 BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,¹⁰⁸ a document describing a possible strategy for coordinating the monitoring activities of BASMAA member agencies. The document states:

BASMAA's member agencies are connected not only by geography but also by an overlapping set of environmental issues and processes and a common regulatory structure. It is only natural that the evolution of their individual stormwater management programs has led toward increasing amounts of information sharing, cooperation, and coordination.

This same concept is found in the optional provision for Permittees to form a regional monitoring collaborative. Such a group is meant to provide efficiencies and economies of scale by performing certain tasks (e.g., planning, contracting, data quality assurance, data management and analysis, and reporting) at the regional level. Further benefits are expected from closer cooperation between this group, the Regional Monitoring Program, and SWAMP.

- C.8-9** This Permit includes monitoring requirements to verify compliance with adopted TMDL WLAs and to provide data needed for TMDL development and/or implementation. This Permit incorporates the TMDLs' WLAs adopted by the Water Board as required under CWA section 303(d).
- C.8-10** SB1070 (California Legislative year 2005/2006) found that there is no single place where the public can go to get a look at the health of local waterbodies. SB1070 also states that all information available to agencies shall be made readily available to the public via the Internet. This Permit requires water quality data to be submitted in a specified format and uploaded to a centralized Internet site so that the public has ready access to the data.

Specific Provision C.8 Requirements

Each of the components of the monitoring provision is necessary to meet the objectives and answer the questions listed in the findings above. Justifications for each monitoring component are discussed below.

Provision C.8.a. Compliance Options. Provision C.8.a. provides Permittees options for obtaining monitoring data through various organizational structures, including use of data obtained by other parties. This is intended to

¹⁰⁸ EcoAnalysis, Inc. & Michael Drennan Assoc., Inc., *Support Document for Development of the Regional Stormwater Monitoring Strategy*, prepared for Bay Area Stormwater Management Agencies Association, March 2, 1998.

- Promote cost savings through economies of scale and elimination of redundant monitoring by various entities;
- Promote consistency in monitoring methods and data quality;
- Simplify reporting; and
- Make data and reports readily publicly available.

In the past, each Stormwater Countywide Program has conducted water quality monitoring on behalf of its member Permittees, and some data were collected by wider collaboratives, such as the Regional Monitoring Program. In this Permit, all the Stormwater Countywide Programs are encouraged to work collaboratively to conduct all or most of the required monitoring and reporting on a region-wide basis. For each monitoring component that is conducted collaboratively, one report would be prepared on behalf of all contributing Permittees; separate reports would not be required from each Program. Cost savings could result also from reduced contract and oversight hours, fewer quality assurance/quality control samples, shared sampling labor costs, and laboratory efficiencies.

Provision C.8.b. San Francisco Estuary Receiving Water Monitoring. The San Francisco Estuary is the ultimate receiving water for most of the urban runoff in this region. For this reason and because of the high value of its beneficial uses, Provision C.8.b requires focused monitoring on the Estuary to continue. Since the mid-1990s, Permittees have caused this monitoring to be conducted by contributing financially and with technical expertise, to the San Francisco Estuary Regional Monitoring Program for Trace Substances. Provision C.8.b requires such monitoring to continue.

Provisions C.8.c. & C.8.e.ii. Status Monitoring and Long-Term Monitoring. Status Monitoring and Long-Term Monitoring serve as surrogates to monitoring the discharge from all major outfalls, of which the Permittees have many. By sampling the sediment and water column in urban creeks, the Permittees can determine where water quality problems are occurring in the creeks, then work to identify which outfalls and land uses are causing or contributing to the problem. In short, Status and Long-Term Monitoring are needed to identify water quality problems and assess the health of streams; they are the first step in identifying sources of pollutants and an important component in evaluating the effectiveness of an urban runoff management program.

Provisions C.8.c.i. and C.8.e.iii. Parameters and Methods

Status & Long-Term parameters and methods reflect current accepted practices, based on the knowledge and experience of personnel responsible for water quality monitoring, including state and Regional SWAMP managers, Permittee representatives, and citizen monitors. Many Status and Long-Term Monitoring parameters are consistent with parameters the Permittees have been monitoring to date. The following parameters are new for some of the Permittees:

- Biological Assessment—to provide site-specific information about the health and diversity of freshwater benthic communities within a specific reach of a creek, using standard procedures developed and/or used by the State Water

Resources Control Board Surface Water Ambient Monitoring Program.¹⁰⁹ It consists of collecting samples of benthic communities and conducting a taxonomic identification to measure community abundance and diversity, which is then compared to a reference creek to assess benthic community health. This monitoring can also provide information on cumulative pollutant exposure/impacts because pollutant impacts to the benthic community accumulate and occur over time.

- Chlorine—to detect a release of potable water or other chlorinated water sources, which are toxic to aquatic life.
- Nutrients—recent monitoring data indicate nutrients, which can increase algal growth and decrease dissolved oxygen concentrations, are present in significant concentrations in Bay area creeks.
- Toxicity and Pollutants in Bedded Sediment—to determine the presence of, and identify, chemicals and compounds that bind to sediment in a creek bed and are toxic to aquatic life.
- Pathogen Indicators—to detect pathogens in waterbodies that could be sources of impairment to recreational uses at or downstream of the sampling location.
- Stream Survey (stream walk and mapping)—to assess the overall physical health of the stream and to gain information potentially useful in interpreting monitoring results.

In consideration of economic impacts to Permittees, the minimum number of Status & Long-Term samples (“Minimum # Sample Sites” columns in Tables 8.1 and 8.3) reflects the Programs’ populations, not waterbody size. Permittees must select exact sample locations that will yield adequate information on the status of their waterbodies; in some cases, additional sampling above the minimum might be necessary.

Provisions C.8.c.ii. and C.8.e.iii. Frequency

Status Monitoring continues to be an annual requirement for the Permittees, except for two much smaller Permittees, Fairfield-Suisun and Vallejo. In considering costs, the frequency of Status Monitoring is established at twice per Permit term for Fairfield-Suisun, and once per Permit term for Vallejo. It is common for Permit terms to be extended through a lengthy Permit reissuance process. Thus, these frequencies are considered the minimum; costs are minimized while data necessary for successful stormwater management are obtained.

Long-Term Monitoring is required every second year (biennially), rather than annually, in order to balance data needs and Permittee costs. To further reduce costs, the Fairfield-Suisun and Vallejo Permittees have no Long-Term Monitoring requirements.

Provisions C.8.c.iii. and C.8.e.ii. Locations

Status Monitoring is to be conducted on a rotating-watershed basis, in similar fashion to the Statewide SWAMP. Provision C.8.c.iii. identifies the major waterbodies, and Permittees are to select which of these waterbodies will be sampled during the Permit

¹⁰⁹ Ode, P.R. 2007. Standard Operating Procedures for Collecting Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California, California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised.

term. The exact sample locations within each waterbody are critical in terms of determining the monitoring program's effectiveness. If correctly sited, the stations are expected to be very useful in answering the monitoring program's management questions and meeting its goals. For this reason, Provision C.8.c.iii. requires sample locations to be based on surrounding land use, likelihood of urban runoff impacts, existing data gaps, and similar considerations. This will help maximize the utility of the sample locations, while also providing the Permittees with adequate flexibility to ultimately choose practical Status Monitoring locations.

Long-Term Monitoring is to be conducted at fixed stations, which are intended to be lower reaches of urban creeks. This monitoring is intended to help assess progress toward reducing receiving water concentrations of impairing pollutants, among other purposes. Provision C.8.e.ii. establishes the waterbodies on which to locate fixed stations, and suggests that fixed stations be co-located with SWAMP fixed stations so that Permittees can use SWAMP data to fulfill some of their monitoring requirements. However, Permittees may select alternate locations based on their knowledge of such factors as site access and stream characteristics and provided that similar data types, data quality, and data quantity are collected.

Provision C.8.d. Monitoring Projects. Monitoring Projects are necessary to meet several water quality monitoring objectives under this Permit, including characterize stormwater discharges; identify sources of pollutants; identify new or emerging pollutants; assess stream channel function and condition; and measure and improve the effectiveness of Stormwater Countywide Programs and implemented BMPs. In consideration of economic impacts to Permittees, the number of Monitoring Projects required reflects the Permittees' populations.

Provision C.8.d.i. Stressor/Source Identification

Minimizing sources of pollutants that could impair water quality is a central purpose of urban runoff management programs. Monitoring which enables the Permittees to identify sources of water quality problems aids the Permittees in focusing their management efforts and improving their programs. In turn, the Permittees' programs can abate identified sources, which will improve the quality of urban runoff discharges and receiving waters. This monitoring is needed to address the management question, "What are the sources to urban runoff that contribute to receiving water problems?"

When Status or Long-Term Monitoring results indicate an exceedance of a water quality objective, toxicity threshold, or other "trigger", Permittees must identify the source of the problem and take steps to reduce any pollutants discharged from or through their municipal storm sewer systems. This requirement conforms to the process, outlined in Provision C.1., of complying with the Discharge Prohibition and Receiving Water Limitations. If multiple "triggers" are identified through monitoring, Permittees must focus on the highest priority problems; a cap on the total number of source identification projects conducted within the Permit term is provided to cap Permittees' potential costs.

Provision C.8.d.ii. BMP Effectiveness Investigation

U.S. EPA's stated approach to NPDES stormwater permitting uses BMPs in first-round permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards.¹¹⁰ The purpose of this monitoring project is to investigate the effectiveness of one currently in-use BMP to determine how it might be improved. Permittees may choose the particular stormwater treatment or hydromodification control BMP to investigate. As with other monitoring requirements, Permittees may work collaboratively to conduct one investigation on a region-wide basis, or each stormwater countywide program may conduct an investigation.

Provision C.8.d.iii. Geomorphic Project

The physical integrity of a stream's bed, bank and riparian area is integral to the stream's capacity to withstand the impacts of discharged pollutants, including chemical pollutants, sediment, excess discharge volumes, increased discharge velocities, and increased temperatures. At present, various efforts are underway to improve geomorphic conditions in creeks, primarily through local watershed partnerships. In addition, local groups are undertaking *green stormwater projects* with the goal of minimizing the physical and chemical impacts of stormwater runoff on the receiving stream. Such efforts ultimately seek to improve the integrity of the waterbodies that receive urban stormwater runoff.

The purpose of the Geomorphic Project is to contribute to these ongoing efforts in each Stormwater Countywide Program area. Permittees may select the geomorphic project from three categories specified in the Permit.

C.8.e. Pollutants of Concern¹¹¹ Monitoring. Federal CWA section 303(d) TMDL requirements, as implemented under the CWC, require a monitoring plan designed to measure the effectiveness of the TMDL point and nonpoint source control measures and the progress the waterbody is making toward attaining water quality objectives. Such a plan necessarily includes collection of water quality data. Provision C.8.e. establishes a monitoring program to measure of the effectiveness of TMDL control measures in progressing toward WLAs. Locations, parameters, methods, protocols, and sampling frequencies for this monitoring are specified. A sediment delivery estimate/budget is also required to improve the Permittees' estimates of their loading estimates. In addition, a workplan is required for estimating loads and analyzing sources of emerging pollutants, which are likely to be present in urban runoff, in the next Permit term.

C.8.f. Citizen Monitoring and Participation. CWA section 101(e) and 40 CFR Part 25 broadly require public participation in all programs established pursuant to the CWA, to foster public awareness of environmental issues and decision-making processes. Provision C.8.f. is intended to do the following:

¹¹⁰ USEPA. 1996. *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits*. Sept. 1, 1996. <http://www.epa.gov/npdes/pubs/swpol.pdf>

¹¹¹ See section C.9, C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

- Support current and future creek stewardship efforts by providing a framework for citizens and Permittees to share their collective knowledge of creek conditions; and
- Encourage Permittees to use and report data collected by creek groups and other third-parties when the data are of acceptable quality.

C.8.g. Reporting. CWC section 13267 provides authority for the Water Board to require technical water quality reports. Provision C.8.g. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements; (2) provide information useful in evaluating compliance with all Permit requirements; (3) enhance public awareness of the water quality in local streams and the Bay; and (4) standardize reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.14. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.14 pertain to pollutants of concern, including those for which TMDLs are being developed or implemented.

Legal Authority

The following legal authority applies to provisions C.9 through C.14:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal stormwater permits to include any requirements necessary to, “[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to, “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

Basin Plan Requirements: Section 4.8 of the Region’s Water Quality Control Plan (Basin Plan) requires that stormwater permits include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. In the first phase, the Water Board requires implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the MEP. If this first phase does not result in attainment of water quality objectives, the Water Board will consider permit conditions that might require implementation of additional control measures. For example, the control measures required as a result of TMDLs may go beyond the measures required in the first phase of the program.

General Strategy for Sediment-Bound Pollutants (Mercury, PCBs, legacy pesticides, PBDEs)

The control measures for mercury are intended to implement the urban runoff requirements stemming from TMDLs for this pollutant. The control measures required for PCBs are intended to implement those that are consistent with control measures in the PCBs TMDL implementation plan that has been approved by the Water Board and is pending approval by the State Board, the Office of Administrative Law, and U.S. EPA. The urban runoff management requirements in the PCBs TMDL implementation plan call for permit-term requirements based on an assessment of controls to reduce

PCBs to the MEP, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing PCBs and mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides, mercury, PBDEs, and PCBs. The strategy for these pollutants is to use PCBs control guide decisions concerning where to focus effort, but implementation of the control efforts would taken into account the benefits for controlling other pollutants of concern. Further, because many of the control strategies addressing these pollutants of concern are relatively untested, the Water Board will implement control measures in the following modes:

1. Full-scale implementation throughout the region.
2. Focused implementation in areas where benefits are most likely to accrue.
3. Pilot-testing in a few specific locations.
4. Other: This may refer to experimental control measures, Research and Development, desktop analysis, laboratory studies, and/or literature review.

The logic of such categorization is that, as actions are tested and confidence is gained regarding level of experience and confidence in the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during this permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. On the other hand there may be some control measures in which there is sufficient confidence, on the basis of prior experience, that the control action should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering information about effectiveness and cost, we will advance our understanding and be able to perform an updated assessment of the suite of actions that will constitute MEP for the following permit term. In fact, in addition to implementing control measures, gathering the necessary information about control measure effectiveness is a vital part of what needs to be accomplished by Permittees during this permit term. In the next permit term, control measures will be implemented on the basis of what we learn in this term, and we will, thus, achieve iterative refinement and improvement through time.

Background on Specific Provisions: Provisions C.9 through C.14 contain both technology-based requirements to control pollutants to the MEP and water quality based requirements to prevent or reduce discharges of pollutants that may cause or contribute to violations of water quality standards. Provisions C.9 and C.11 of the Permit incorporate requirements for the two TMDLs that have been fully approved and are effective for the Permittees. These TMDLs are for pesticide-related toxicity in urban creeks and mercury in San Francisco Bay. Additionally, Provision C.12 contains measures that address PCBs. The Regional Water Board has adopted a PCB TMDL, but it is still pending approval by State Board, the Office of Administrative Law, and U.S. EPA. This PCBs TMDL includes requirements that would be consistent with this

provision. Finally, Provision C.13 contains measures to implement the copper site-specific objective in San Francisco Bay.

Where a TMDL has been approved, NPDES permits must contain effluent limitations and conditions consistent with the requirements and assumptions in the TMDL.¹¹² Effluent limitations are generally expressed in numerical form. However, USEPA recommends that for NPDES-regulated municipal and small construction stormwater discharges, effluent limitations should be expressed as BMPs or other similar requirements rather than as numeric effluent limitations.¹¹³ Consistent with USEPA's recommendation, this section implements WQBELs expressed as an iterative BMP approach capable of meeting the WLAs in accordance with the associated compliance schedule. The Permit's WQBELs include the numeric WLA as a performance standard and not as an effluent limitation. The WLA can be used to assess if additional BMPs are needed to achieve the TMDL Numeric Target in the waterbody.

¹¹² 40 CFR 122.44(d)(1)(vii)(B)

¹¹³ USEPA, 2002. Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs. P. 4.

C.9. Pesticides Toxicity Control

Fact Sheet Findings in Support of Provision C.9.

- C.9-1** This Permit fulfills the Basin Plan amendments the Water Board adopted that establish a Water Quality Containment Strategy and TMDL for diazinon and pesticide-related toxicity for Bay Area urban creeks on November 16, 2005, and approved by the State Water Board on November 15, 2006. The Water Quality Containment Strategy requires urban runoff management agencies to minimize their own pesticide use, conduct outreach to others, and lead monitoring efforts. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff to the MEP.
- C.9-2 (Allocations):** The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations.

Specific Provision C.9 Requirements

C.9 provisions fully implement the TMDL for Urban Creeks Pesticide Toxicity. All C.9 provisions are stated explicitly in the implementation plan for this TMDL. Permittees are encouraged to coordinate activities with the Urban Pesticide Pollution Prevention Project, the Urban Pesticide Committee, and other agencies and organizations. The Urban Pesticide Pollution Prevention (UP3) Project has been funded by a grant from the State Water Board and its goal is to prevent water pollution from urban pesticide use. The Urban Pesticides Committee serves as an information clearinghouse and as a forum for coordinating pesticide TMDL implementation.

The UP3 Project provides resources and information on integrated pest management (IPM) and tools to municipalities to support their efforts to reduce municipal pesticide use and to conduct outreach to their communities on less-toxic methods of pest control. In addition, it provides technical assistance to municipalities to encourage the U.S. Environmental Protection Agency and the California Department of Pesticide Regulation to prevent water quality problems from pesticides. It also maintains and manages the Urban Pesticides Committee, a statewide network of agencies, nonprofits, industry, and other stakeholders that are working to solve water quality problems from pesticides.

Specific tools provided by the UP3 Project that relate to permit requirements include:

- Guidance and resources to help agencies create contracts and bid documents for structural pest management services that help them meet their integrated pest management goals
- IPM policies and ordinances
- IPM training workshops and materials

- Outreach program design resources
- Resources for evaluating effectiveness

Provisions C.9.a through C.9.d are designed to insure that integrated pest management (IPM) is adopted and implemented as policy by all municipalities. IPM is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. If implemented properly, it is an approach that can significantly reduce or eliminate the use of pesticides. The implementation of IPM will be assured through training of municipal employees and the requirement that municipalities only hire IPM-certified contractors.

Provision C.9.e requires that municipalities (through cooperation or participation with BASMAA) track and participate in pesticide regulatory processes like the USEPA pesticide evaluation and registration activities related to surface water quality, and the California Department of Pesticide Regulation (DPR) pesticide evaluation activities. The goal of these efforts is to encourage both the state and federal pesticide regulatory agencies to accommodate water quality concerns within the pesticide regulation or registration process. Through these efforts, it could be possible to prevent pesticide-related water quality problems from happening by affecting which products are brought to market.

Provision C.9.g is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the permit. The particulars of assessment will depend on the nature of the control measure.

Provision C.9.h directs the municipalities to conduct outreach to consumers at point of purchase and provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control. One way in which this can be accomplished is for the Permittees to participate in and provide resources for the “Our Water, Our World” program (www.ourwaterourworld.org) or a functionally equivalent pesticide use reduction outreach program. The “Our Water, Our World” program has developed a Web site with many resources, “to assist consumers in managing home and garden pests in a way that helps protect” the environment.

C.10. Trash Load Reduction

Legal Authority

The following legal authority applies to section C.10:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires, “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires, “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, “a description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, “a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”

San Francisco Bay Basin Plan, Chapter 4 – Implementation, Table 4-1 Prohibitions, Prohibition 7, which is consistent with the State Water Board’s Enclosed Bays and Estuaries Policy, Resolution 95-84, prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. This prohibition was adopted by the Water Board in the 1975 Basin Plan, primarily to protect recreational uses such as boating.

Fact Sheet Findings in Support of Provision C.10

- C.10-1** Trash and litter are a pervasive problem near and in creeks and in San Francisco Bay. Controlling trash is one of the priorities for this Permit reissuance not only because of the trash discharge prohibition, but also because trash and litter cause particularly major impacts on our enjoyment of creeks and the Bay. There are also significant impacts on aquatic life and habitat in those waters and eventually to the global ocean ecosystem, where plastic often floats, persists in the environment for hundreds of years, if not

forever, concentrates organic toxins, and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared and can ingest plastic that looks like prey, losing the ability to feed properly.

For the purposes of this provision, trash is defined to consist of litter and particles of litter. Man made litter is defined in California Government Code section 68055.1 (g): *Litter* means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

C.10-2 Data collected by Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,¹¹⁴ over the 2003–2005 period,¹¹⁵ suggest that the current approach to managing trash in waterbodies is not reducing the adverse impact on beneficial uses. The levels of trash in the waters of the San Francisco Bay Region are alarmingly high, considering the Basin Plan prohibits discharge of trash and that littering is illegal with potentially large fines. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to San Francisco Bay and the Pacific Ocean. On the basis of 85 surveys conducted at 26 sites throughout the Bay Area, staff have found an average of 2.93 pieces of trash for every foot of stream, and all the trash was removed when it was surveyed, indicating high return rates of trash over the 2003–2005 study period. There did not appear to be one county within the Region with higher trash in waters—the highest wet weather deposition rates were found in western Contra Costa County, and the highest dry weather deposition was found in Sonoma County. Results of the trash in waterbodies assessment work by staff show that rather than adjacent neighborhoods polluting the sites at the bottom of the watershed, these areas, which tend to have lower property values, are subject to trash washing off with urban stormwater runoff cumulatively from the entire watershed.

C.10-3 A number of key conclusions can be made on the basis of the trash measurement in streams:

- Lower watershed sites have higher densities of trash.
- All watersheds studied in the San Francisco Bay Region have high levels of trash.
- There are trash source hotspots, usually associated with parks, schools, or poorly kept commercial facilities, near creek channels, that appear to contribute a significant portion of the trash deposition at lower watershed sites.

¹¹⁴ SWAMP Rapid Trash Assessment Protocol, Version 8

¹¹⁵ SWAMP S.F. Bay Region Trash Report, January 23, 2007

- Dry season deposition of trash, associated with wind and dry season runoff, contributes measurable levels of trash to downstream locations.
 - The majority of trash is plastic at lower watershed sites where trash accumulates in the wet season. This suggests that urban runoff is a major source of floatable plastic found in the ocean and on beaches as marine debris.
 - Parks that have more evident management of trash by city staff and local volunteers, including cleanup within the creek channel, have measurably less trash pieces and higher RTA scores.
- C.10-4** The ubiquitous, unacceptable levels of trash in waters of the San Francisco Bay Region warrant a comprehensive and progressive program of education, warning, and enforcement, and certain areas warrant consideration of structural controls and treatment.
- C.10-5** Trash in urban waterways of coastal areas can become *marine debris*, known to harm fish and wildlife and cause adverse economic impacts.¹¹⁶ Trash is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and ocean beaches throughout the San Francisco Bay Region, particularly in urban areas.
- C.10-6** Trash adversely affects numerous beneficial uses of waters, particularly recreation and aquatic habitat. Not all litter and debris delivered to streams are of equal concern with regards to water quality. Besides the obvious negative aesthetic effects, most of the harm of trash in surface waters is imparted to wildlife in the form of entanglement or ingestion.^{117,118} Some elements of trash exhibit significant threats to human health, such as discarded medical waste, human or pet waste, and broken glass.¹¹⁹ Also, some household and industrial wastes can contain toxic batteries, pesticide containers, and fluorescent light bulbs that contain mercury. Large trash items such as discarded appliances can present physical barriers to natural stream flow, causing physical impacts such as bank erosion. From a management perspective, the persistent accumulation of trash in a waterbody is of particular concern, and signifies a priority for prevention of trash discharges. Also of concern are trash *hotspots* where illegal dumping, littering, and/or accumulation of trash occur.
- C.10-7** The narrative water quality objectives applicable to trash are Floating Material (Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely

¹¹⁶ Moore, S.L., and M.J. Allen. 2000. Distribution of anthropogenic and natural debris on the mainland shelf of the Southern California Bight. *Mar. Poll. Bull.* 40:83-88.

¹¹⁷ Laist, D. W. and M. Liffmann. 2000. *Impacts of marine debris: research and management needs*. Issue papers of the International Marine Debris Conference, Aug. 6-11, 2000. Honolulu, HI, pp. 16-29.

¹¹⁸ McCauley, S.J. and K.A. Bjorndahl. 1998. Conservation implications of dietary dilution from debris ingestion: sublethal effects in post-hatchling loggerhead sea turtles. *Conserv. Biol.* 13(4):925-929.

¹¹⁹ Sheavly, S.B. 2004. *Marine Debris: an Overview of a Critical Issue for our Oceans*. 2004 International Coastal Cleanup Conference, San Juan, Puerto Rico. The Ocean Conservancy.

affect beneficial uses), Settleable Material (Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses), and Suspended Material (Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses).

- C.10-8** The Water Board, at its February 11, 2009 hearing, adopted a resolution proposing that 26 waterbodies in the region be added to the 303(d) list for the pollutant trash. The adopted Resolution and supporting documents are contained in Attachment 10.1 – 303(d) Trash Resolution and Staff Report Feb 2009.

Specific Provision C.10 Requirements

Provision C.10. Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below.

C.10.a.i. Short-Term Trash Load Reduction Plan

The Short-Term Trash Load Reduction Plan is intended to describe actions to incrementally reduce trash loads toward the 2014 requirement of a 40% reduction and eventual abatement of trash loads to receiving waters.

C.10.a.ii. Baseline Trash Load and Trash Load Reduction Tracking Method

In order to achieve the incremental trash load reductions in an accountable manner, the Permittees will propose Baseline Trash Loads and a Trash Load Reduction Tracking Method. The Tracking will account for additional trash load reducing actions and BMPs the Permittees implement. Permittees are also able to propose, with documentation, areas for exclusion from the Tracking Method accounting, by demonstrating that these areas already meet the Discharge Prohibition A.2 and have no trash loads.

C.10.a.iii. Minimum Full Trash Capture

Installation of full trash capture systems to prevent trash loads through the MS4 is MEP as demonstrated by the significant implementation of these systems occurring in the Los Angeles region. The minimum full trash capture installation requirements in this permit represent a moderate initial step toward employing this tool for trash load reduction.

C.10.b.i, ii. Trash Hot Spot Selection and Clean Up

Trash Hot Spots must be cleaned up as an interim measure until complete abatement of trash loads occurs. Eventually, with adequate source controls and trash loading abatement, trash hot spots will not occur in the receiving waters. In addition, Permittees will be credited for trash volume removed from hot spots in the trash load reduction tracking.

C.10.b.iii. Hot Spot Assessments

Trash Hot Spot assessments have been simplified and streamlined. Rather than counting individual trash items, which can vary in size from small plastic of glass particles to shopping carts, volume of material removed is measured, along with dominant types of trash removed. Photographs are recorded both before and after cleanup, to add to the record and verify cleanup.

C.10.c. Long Term Trash Load Reduction

Each Permittee will submit a Plan to achieve the incremental progress of 70% trash load reduction by 2017 during the following permit term, and the 100% reduction of trash loading by 2022.

C.10.d. Reporting

This sub-provision sets forth the reporting required in this provision, including the specific submittals and reports, and the annual reporting requirements.

Costs of Trash Control

Costs for either enhanced trash management measure implementation or installation and maintenance of trash capture devices are significant, but when spread over several years, and when viewed on a per-capita basis, are reasonable. Also, Trash capture devices have been installed by cities in California and in the Bay Region.

Trash and litter are costly to remove from our aquatic resource environments. Staff from the California Coastal Commission report that the Coastal Cleanup Day budget statewide: \$200,000-250,000 for staff Coastal Commission staff, and much more from participating local agencies. The main component of this event is the 18,000 volunteer-hours which translates to \$3,247,200 in labor, and so is equivalent to \$3,250,000-3,500,000 per year to clean up 903,566 pounds of trash and recyclables at \$3.60 to \$3.90 per pound. This is one of the most cost-effective events because of volunteer labor and donations. The County of Los Angeles spends \$20 million per year to sweep beaches for trash, according to Coastal Commission staff.

In Oakland, the Lake Merritt Institute is currently budgeted at \$160,000 per year, with trash and litter removal from the Lake as a major task. The budget has increased from about \$45,000 in 1996 to current levels. In the period of 1996-2005 the Lake Merritt Institute staff, utilizing significant volunteer resources, and accomplishing other education tasks, removed 410,859 pounds of trash from the Lake at cost of \$951,725 at \$2.3 per pound.

The City of Oakland reports that installation of two vortex and screen separators, titled by their brand name of CDS units, which cost, according to the table below, \$821,000 for installations that treat tributary catchments of 192 acres before discharge to Lake Merritt at \$4,276 per acre.

City of Oakland—CDS Unit Overview 9-07

Existing CDS unit location	Outfall number	Treatment area (acres)	Cost of implementation	Sizing	Maintenance requirements	Comments
Intersection of 27 th and Valdez Streets	56*	71	\$203,000 to contactor; plus ~\$100,000 City costs	73 cfs peak flow; 36" stormdrain; Unit sizing: 18'6'6" box with 10'11"diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Required relocation of electrical conduit. Water main and gas line were also in the way; the box was adjusted to accommodate these conflicts.
Intersection of 22 nd and Valley Streets	56*	121	\$368,000 to contactor; plus ~\$150,000 City costs	115 cfs peak flow; 54" stormdrain; Unit sizing: 18'8.5'6" box with 12'diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Installation costs were higher than anticipated. Sewer lines and PGE facilities were exposed that were not known before. Unit had to be modified and poured-in-place.

* The city is treating 192 acres or 72 percent of the 252 acres draining to outfall 56.

Mr. Morad Sedrak, the TMDL Implementation Program Manager, Bureau of Sanitation, Department of Public Works, City of Los Angeles, reports that the City plans to invest \$72 million dollars for storm drain catch basin based capture device installation primarily, for a City of 4 million population, for a per-capita cost of \$18 dollars. This effort is occurring over a span of over five years, for an annual per-capita cost of under \$4.

Mr. Sedrak reports that O&M costs are not anticipated to increase, as the City of L.A. is already budgeted for 3 catch basin cleanings per year. He also states that catch basin inserts installed inside the catch basin in front of the lateral pipe, which have been certified by the Los Angeles Regional Water Board as total capture trash control devices, cost approximately \$800 to \$3,000 depending on the depth of the catch basin. The price quoted includes installation and the insert is made of Stainless Steel 316.

Furthermore, the price for catch basin opening screen covers, which are designed to retain trash at the street level for removal by sweepers, and also to open if there is a potential flooding blockage, ranges roughly from \$800 to \$4,500, depending on the opening size of the catch basin.

The City of Los Angeles has currently spent 27 million dollars on a retrofit program to install catch basin devices in approximately 30% of its area, with either inserts or screens

or both. Mr. Sedrak states that Los Angeles plans to spend \$45 million over the next 3 years to retrofit the remaining catch basins within the City. The total number of catch basins within the City is approximately 52,000.

Here are some links to information about the Los Angeles trash control approach:

<http://www.lastormwater.org/Siteorg/program/TMDLs/trashtmdl.htm>

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf
http://www.lastormwater.org/Siteorg/program/poll_abate/cbscreens.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbinserts.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbscreens.htm

Additional cost information on various trash capture devices are included in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) BMP Trash Toolbox (July 2007). The Toolbox contains cost information for both trash capture devices and enhanced trash management measure implementation, covers a broad range of options and also discusses operation and maintenance costs. Catch basin screens are included with an earlier estimate by the City of Los Angeles of \$44 million over 10 years to install devices in 34,000 inlets.

Litter booms are also discussed with an example from the City of Oakland. The Damon Slough litter boom or sea curtain cost \$36,000 for purchase and installation, including slough side access improvements for maintenance and trash removal. Annual maintenance costs have been \$77,000 for weekly maintenance, which includes use of a crane for floating trash removal.

The costs of the full trash capture device installation required in the Order is significantly less than the previous tentative orders requirements for trash capture, as set forth in the table below.

Trash Capture Cost Estimates – Final TO versus previous TOs

Trash Capture Device Requirement	Acres of Capture	Cost for Trash Capture Installation	Percent of Retail/Wholesale Commercial (ABAG 2005)	Per capita \$, Population = 4,533,634
Final TO: Implemented in Year 4 – 30% of Retail/Wholesale Commercial	5527	\$ 27,635,000	30%	\$6.06
Previous TOs: Implement in Year 4, 5% of Urban/suburban land	0.05 X 529,712 = 26,485 (BASMAA) or ABAG 0.05 X 655,015 = 32,750	\$132,425,000 or \$163,750,000	5% of Urban/suburban land	\$29 or \$36

30% X 18,426 acres = 5527 acres X \$5000/acre = **\$27,635,000** for four counties for installation; maintenance will add an additional cost. The Permittees may work cooperatively to achieve this capture installation requirement, and there is the potential for Regional revenue development. The previous requirement was 5% of (.05 X 655,015) (529,712 by BASMAA’s count) acres of urban land (from ABAG 2005 table) = 32,750 acres, ((26,486 according to BASMAA) X \$5000 = \$132,000,000).

C.11. Mercury Controls

Fact Sheet Findings in Support of Provision C.11

- C.11-1** On August 9, 2006, the Water Board adopted a Basin Plan amendment including a revised TMDL for mercury in San Francisco Bay, two new water quality objectives, and an implementation plan to achieve the TMDL. The State Water Board has approved this Basin Plan amendment, and USEPA approval is pending. C.11-2 through C.11-6 are components of the Mercury TMDL implementation plan relevant to implementation through the municipal stormwater permit.
- C.11-2** The 2003 load of mercury from urban runoff is 160 kg/yr, and the aggregate WLAs for urban runoff is 80 kg/yr and shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and Caltrans. The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, *source category*) including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.
- C.11-3** The allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved within 10 years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.
- C.11-4** The NPDES permits for urban runoff management agencies shall require the implementation of BMPs and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to humans and wildlife. Requirements in the permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff to the MEP and remain consistent with the section of this chapter titled, *Surface Water Protection and Management—Point Source Control—Stormwater Discharges*.
- C.11-5** The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.
- a. Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;
 - b. Develop and implement a mercury source control program;

- c. Develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;
- d. Monitor levels of methylmercury in discharges;
- e. Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal areas;
- f. Develop an equitable allocation-sharing scheme in consultation with Caltrans (see below) to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board;
- g. Prepare an Annual Report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and
- h. Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in Individual WLAs (see Table 4-w of the Basin Plan amendment), by using one of the following methods:
 - (1) Quantify the annual average mercury load reduced by implementing
 - i. Pollution prevention activities, and
 - ii. Source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.
 - (2) Quantify the mercury load as a rolling 5-year annual average using data on flow and water column mercury concentrations.
 - (3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

C.11-6 Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Specific Provision C.11 Requirements

The C.11 provisions implement the mercury TMDL and follow the general approach for sediment-bound pollutants discussed above where we seek to build our understanding and level of certainty concerning control actions by implementing actions in a phased approach. We then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective. Accordingly, there are some provisions that will be implemented throughout the Region, some that will be tested on a limited basis first before making the decision to expand region-wide in the next permit term. Some of the measures are companion measures for efforts targeting PCBs.

Provision C.11.a. Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and Provision C.11.a requires promotion, facilitation and/or participation in these region-wide recycling efforts to increase effectiveness and public participation.

Provision C.11.b. The remand resolution of the SF Bay Mercury TMDL made it clear that methyl mercury monitoring must be required of all NPDES Permittees. Methyl mercury is the most toxic form of mercury, and there is very little information, if any, regarding the concentrations of methyl mercury found in urban runoff. The purpose of the monitoring required through this provision is to obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations in urban runoff.

Provisions C.11.c through Provision C.11.f relate to identical C.12 Provisions for PCBs. For each of these, sites for pilot studies will primarily be chosen on the basis of the potential for reducing PCB loads, but consideration will be given to mercury removal in the final design and implementation of the studies. For more information, see the fact sheet discussions for Provisions C.12.c, d, e, and f and Provision C.2.g.

Provision C.11.g implements the TMDL requirement that Permittees measure mercury loads and loads reduced from program activities. There are three options for accomplishing this requirement: quantifying mercury loads reduced through implemented control measures, quantify mercury loading into the Bay from urban runoff, or demonstrating that the concentration of mercury on suspended sediment particles is below the sediment target of 0.2 ppm. It is likely that the first option will be chosen, and this will require development of an accounting system to establish what load reductions result from program activities. This will not be difficult for those measures that involve capture and measurement of mercury-containing sediment, but it will be more challenging for efforts that do not involve direct measurement.

Provision C.11.h is equivalent to Provision C.12.h for PCBs and is motivated by the same remaining technical uncertainties.

Provision C.11.i requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities.

Provision C.11.j requires an allocation sharing scheme to be developed in cooperation with Caltrans. The urban runoff TMDL allocation implicitly includes loads from Caltrans facilities.

C.12. PCBs Controls

The C.12 provisions are consistent with the regulatory approach and implementation plan of the San Francisco Bay PCBs TMDL adopted by the Water Board. They follow the general approach for sediment-bound pollutants discussed above where we seek to build our understanding and level of certainty concerning control actions by implementing actions in a phased approach. We then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective. Accordingly, there are some provisions that will be implemented throughout the region, some that will be tested on a limited basis first before making the decision to expand region-wide in the next permit term.

Fact Sheet Findings in Support of Provision C.12

C.12-2 On February 13, 2008, the Water Board adopted a Basin Plan amendment establishing a TMDL for PCBs in San Francisco Bay and an implementation plan to achieve the TMDL. Approval by the State Water Board and USEPA is pending. The following excerpts from the TMDL implementation plan are relevant to implementation of the municipal stormwater permit.

“Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities (except construction and industrial sites) shall reduce PCBs in stormwater runoff to the maximum extent practicable. Control measures for construction and industrial sites shall reduce discharges based on best available technology economically achievable. All permits shall remain consistent with Section 4.8 - Stormwater Discharges.

In the first five-year permit term, stormwater Permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater Permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in

attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation-

In addition, stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.

Stormwater runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an stormwater runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question."

- C.12-3 Some PCB congeners have dioxin-like properties.** Dioxins are persistent, bioaccumulative, toxic compounds that are produced from the combustion of organic materials in the presence of chlorine. Dioxins enter the air through fuel and waste emissions, including diesel and other motor vehicle exhaust fumes and trash incineration, and are carried in rain and contaminate soil. Dioxins bioaccumulate in fat, and most human exposure occurs through the consumption of animal fats, including those from fish. Therefore, the actions targeting PCBs will likely have the simultaneous benefit of addressing a portion of the dioxin impairment resulting from dioxin-like PCBs.

Specific Provision C.12 Requirements

Provision C.12.a. PCBs were used in a variety of electrical devices and equipment, some of which still can be found during industrial inspections. Provision C.12.a requires the stormwater management agencies to ensure that industrial inspectors can identify PCBs or PCB-containing equipment during their inspections and make sure appropriate agencies are notified if they are found. There is enough experience and/or background knowledge about the presence of such PCB-containing equipment that this measure should be implemented region-wide during this permit term.

Provision C.12.b. PCBs are used in a variety of building materials like caulks and adhesives. PCBs contained in such materials can be liberated and transported in runoff during and after demolition and renovation activities. At this point, it is not known how extensive this type of PCB contamination is in the region. Therefore, the expectation for

this permit term is that Permittees conduct pilot studies (Provision C.12.b) that includes evaluation of the presence of PCBs in such materials, sampling and analysis, and BMP development to prevent PCBs in these materials from being released into the environment during demolition and renovation. Conducting these pilot tests and reporting results will help determine if control measures for PCBs from these sources should be implemented in a more widespread fashion in the next permit term.

Provisions C.12.c and C.12.d form the core of PCB-related efforts for this permit term, and these efforts are crucial for the iterative development of effective control measures for PCBs and other sediment-bound pollutants in future permit terms. The overarching purpose of these two provisions is to conduct five comprehensive pilot studies in locations known to contain high levels of PCBs. The pilot studies will involve a combination of efforts including abatement of the on-land PCB contamination (Provision C.12.c) as well as exploration of sediment management practices (C.12.d) that can be implemented by municipalities to control migration of the PCBs away from the source of contamination. We expect that a suite of control measures will be applied in these five pilot regions to determine the optimum suite of measures for controlling PCB contamination and preventing its transport through the storm drain system. The lessons learned through these pilot efforts will inform the direction of future efforts targeting contaminated zones throughout the Region in subsequent permit terms.

Provision C.12.e. One promising management practice for addressing a wide range of sediment-bound contaminants, including PCBs is on-site treatment. Provision C.12.e requires selection of 10 locations for pilot studies spanning treatment types as described in the Provision. This effort can be conducted in conjunction with Provision C.12.d such that on-site treatment efforts conducted as part of C.12.d can be counted toward accomplishing C.12.e requirements.

Provision C.12.f. Another promising management practice is the diversion of certain flows to the sanitary sewers to be treated by the local POTWs. Provision C.12.f requires an evaluation of locations for diversion pilot studies and implementation of pilot studies at five pump stations. This effort can be conducted in conjunction with Provision C.12.d such that POTW diversion efforts conducted as part of C.12.d can be counted toward accomplishing C.12.f requirements. Also see discussion under Provision C.2.g.

Provision C.12.g requires, consistent with the approach taken in the PCBs TMDL, development of a monitoring system to quantify PCBs loads and loads reduced through source control, treatment and other management measures. This monitoring system will be used to determine progress toward meeting TMDL load allocations. This system should establish the baseline loading or loads reduced against which to compare future loading and load reductions.

Provision C.12.h. There are still uncertainties surrounding the magnitude and nature of PCBs reaching the Bay in urban runoff and the ultimate fate of such PCBs, including biological uptake. Provision C.12.h requires that Permittees ensure that fate and transport studies of PCBs in urban runoff are completed.

Provision C.12.i. requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities.

C.13. Copper Controls

Chronic and acute site-specific objectives (SSOs) for dissolved copper have been established in all segments of San Francisco Bay. The plan to implement the SSOs and ensure the achievement and ongoing maintenance of the SSOs in the entire Bay includes two types of actions for urban runoff management agencies. These actions from the SSO implementation are implemented through this permit as provisions to control urban runoff sources of copper as well as measures to resolve remaining technical uncertainties for copper fate and effects in the Bay.

The control measures for urban runoff target significant sources of copper identified in a report produced in 2004 for the Clean Estuary Partnership.¹²⁰ This report updated information on sources of copper in urban runoff, loading estimates and associated level of uncertainty, and summarized feasible control measures and priorities for further investigation. Accordingly, the permit provisions target major sources of copper including vehicle brake pads, architectural copper, copper pesticides, and industrial copper use.

Fact Sheet Findings in Support of Provision C.13.

- C.13-1** Urban runoff is a conveyance mechanism by which copper reaches San Francisco Bay.
- C.13-2** Copper has the reasonable potential to cause or contribute to exceedances of copper water quality standards in San Francisco Bay.
- C.13-3** Site specific water quality objectives for dissolved copper have already been adopted for South San Francisco Bay will soon be adopted for the rest of the Bay.
- C.13-4** The Permit requirements to control copper to the MEP are necessary to implement and support ongoing achievement of the site-specific water quality objectives.

Specific Provision C.13. Requirements

Provision C.13.a. Copper is used as an architectural feature in roofs, gutters and downspouts. When these roofs are cleaned with aggressive cleaning solutions, substantial amounts of copper can be liberated. The provision C.13.a for architectural copper involves a variety of strategies ranging from BMPs to prohibition against discharge of these cleaning wastes to the storm drain.

¹²⁰ TDC (TDC Environmental). 2004. *Copper Sources in Urban Runoff and Shoreline Activities*. Prepared for the Clean Estuary Partnership.

Provision C.13.b. Copper is commonly used as an algaecide in pools, spas, and fountains. The provision C.13.b prohibits discharge to the storm drain of copper-containing wastewater from such amenities.

Provision C.13.c. Vehicle brake pads are a large source of copper to the urban environment. There are cooperative efforts (e.g., the Brake Pad Partnership) evaluating the potential effects of brake wear debris on water quality. This cooperative effort could result in voluntary actions to reduce the amount of copper in automobile brake pads. However, this voluntary reduction is uncertain, and some aftermarket brake pads are possibly unaffected by the voluntary action. Moreover, the benefits of copper content reduction might be slowly realized because there is a great deal of wear debris already deposited on watersheds, and this wear debris will continue to be deposited as long as copper-containing brake pads are in use. Therefore, there might need to be additional measures addressing copper-containing wear debris on the part of urban stormwater management agencies. Provision C.13.c requires ongoing participation in the cooperative efforts of the Partnership.

Provision C.13.d Some industrial facilities likely use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers). This control measure requires municipalities to include these facilities in their inspection program plans.

The most recent Staff Report¹²¹ for the SSOs north of the Dumbarton Bridge also describes several areas of remaining technical uncertainty, and **Provision C.13.e** requires studies to address these uncertainties. Two of these areas are of particular concern, and urban runoff management agencies are required to conduct or cause to be conducted studies to help resolve these two uncertainties.

The first uncertainty concerns copper's tendency, even at low concentrations, to cause a variety of sublethal (not resulting in death, but in impaired function) effects. The studies documenting such effects have, so far, been conducted in the laboratory in experiments modeling freshwater systems, and many of them have not yet been published. A number of uncertainties need to be resolved before interpretation and extension to marine or estuarine systems can be attempted.¹²²

The second uncertainty is that surface sediment samples have exhibited toxicity to test organisms at a number of sites throughout the Bay. Research has shown that sediment toxicity to bivalve embryos is caused by "elevated concentrations of divalent cations....with copper as the most probable cause of toxicity." Additional studies are needed to further examine whether water and sediment toxicity tests used in the RMP are accurate predictors of impacts on the Bay's aquatic and benthic communities.

¹²¹ SFBRWQCB (San Francisco Bay Regional Water Quality Control Board). 2007. *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report*. June.

¹²² Ibid.

C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium

This section is predicated on the fact that legacy pesticides, PBDEs, and selenium are either known to impair or potentially impair Bay and tributary beneficial uses. Further, urban stormwater is a likely or potential cause or contributor to such impairment. The requirements for this permit term are primarily information gathering consistent with Provision C.1. Namely, this provision requires that Permittees gather information on a number of pollutants of concern (e.g., PBDEs, DDT, dieldrin, chlordane, selenium) for which TMDLs are planned or are in the early stages of development.

The goals of the provisions in this section are the following: One goal is to determine the concentrations and distribution of these pollutants and if urban runoff is a conveyance mechanism associated with their possible impairment of San Francisco Bay.

A second goal is to gather and provide information to allow calculation of PBDEs, legacy pesticides, and selenium loads to San Francisco Bay from urban runoff conveyance systems. A third goal is to identify control measures and/or management practices to eliminate or reduce discharges of PBDEs, legacy pesticides, or selenium conveyed by urban runoff conveyance systems. The Permittees are encouraged to work with the other municipal stormwater management agencies in the Bay Region to implement a plan to identify, assess, and manage controllable sources of these pollutants in urban runoff. The control actions initiated for PCBs will form the core of initial actions targeting sediment bound pollutants like these. It is very likely that some of these PCB control measures (see Provision C.12) warrant consideration for the control of sediment bound pollutants like PBDEs, legacy pesticides, and possibly others as well.

C.15. Exempted and Conditionally Exempted Discharges

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC section 1337, and Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators, “to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain non-stormwater discharges.

Fact Sheet Findings in Support of Provision C.15.

Prohibition A.1. effectively prohibits the discharge of non-stormwater discharges into the storm sewer system. However, we recognize that certain types of non-stormwater discharges may be exempted from this prohibition if they are unpolluted and do not violate water quality standards. Other types of non-stormwater discharges may be conditionally exempted from Prohibition A.1. if the discharger employs appropriate control measures and BMPs prior to discharge, and monitors and reports on the discharge.

Specific Provision C.15. Requirements

Provision C.15.a. Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are exempted from Discharge Prohibition A.1. if such discharges are unpolluted and do not violate water quality standards. If any exempted non-stormwater discharge is identified as a source of pollutants to receiving waters, the discharge shall be addressed as a conditionally exempted discharge and must meet the requirements of Provision C.15.b.

Provision C.15.b. Conditionally Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are conditionally exempted from Discharge Prohibition A.1. if they are identified by Permittees or the Executive Officer as not being sources of pollutants to receiving waters. To eliminate adverse impacts from such discharges, project proponents shall develop and implement appropriate pollutant control measures and BMPs, and where applicable, shall monitor and report on the discharges in accordance with the requirements specified in Provision C.15.b. The intent of Provision C.15.b.’s requirements is to facilitate Permittees in regulating these non-stormwater discharges to the storm drains since the Permittees have ultimate responsibility for what flows in those storm drains to receiving waters. For all planned discharges, the nature and characteristic of the discharge must be verified prior to the discharge so that effective

pollution control measures are implemented, if deemed necessary. Such preventative measures are cheaper by far than post-discharge cleanup efforts.

Provision C.15.b.i.(1). Pumped Groundwater from Non Drinking Water Aquifers. These aquifers tend to be shallower than drinking water aquifers and more subject to contamination. The wells must be purged prior to sample collection. Since wells are purged regularly, this section of the Permit requires twice a year monitoring of these aquifers. Pumped groundwater from non drinking water aquifers, which are owned and/or operated by Permittees who pump groundwater as drinking water, are conditionally exempted as long as the discharges meet the requirements in this section of the Permit.

Provision C.15.b.i.(2). Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains. This section of the Permit encourages these types of discharges to be directed to landscaped areas or bioretention units, when feasible. If the discharges cannot be directed to vegetated areas, it requires testing to determine if the discharge is uncontaminated. Uncontaminated discharges shall be treated, if necessary, to meet specified discharge limits for turbidity and pH.

Provision C.15.b.ii. Air Conditioning Condensate. Small air conditioning units are usually operated during the warm weather months. The condensate from these units are uncontaminated and unlikely to reach a storm drain or waters of the State because they tend to be low in volume and tend to evaporate or percolate readily. Therefore, condensate from small air conditioning units should be discharged to landscaped areas or the ground. Commercial and industrial air conditioning units tend to produce year-round continuous flows of condensate. It may be difficult to direct a continuous flow to a landscaped area large enough to accommodate the volume. While the condensate tends to be uncontaminated, it picks up contaminants on its way to the storm drain and/or waters of the State and can contribute to unnecessary dry weather flows. Therefore, discharges from new commercial and industrial air conditioning units should be discharged to landscaped areas, if they can accommodate the continuous volume, or to the sanitary sewer, with the local sanitary sewer agency's approval. If none of these options are feasible, air conditioning condensate can be directly discharged into the storm drain. If descaling or anti-algal agents are used to treat the air conditioning units, residues from these agents must be properly disposed of.

Provision C.15.b.iii. Planned, Unplanned, and Emergency Discharges of the Potable Water System. Potable water discharges contribute pollution to water quality in receiving waters because they contain chlorine or chloramines, two very toxic chemicals to aquatic life. Potable water discharges can cause erosion and scouring of stream and creek banks, and sedimentation can result if effective BMPs are not implemented. Therefore, appropriate dechlorination and monitoring of chlorine residual, pH and turbidity, particularly for planned discharges of potable water, are crucial to prevent adverse impacts in the receiving waters.

This section of the Permit requires Permittees to notify Water Board staff at least one week in advance for planned discharges of potable water with a flowrate of 250,000 gpd or more or a total 500,000 gallons or more. These planned discharges must meet specified discharge benchmarks for chlorine residual, pH, and turbidity.

To address unplanned discharges of potable water such as non-routine water line breaks, leaks, overflows, fire hydrant shearing, and emergency flushing, this section of the Permit requires Permittees to implement administrative BMPs such as source control measures, managerial practices, operations and maintenance procedures or other measures to reduce or prevent potential pollutants from being discharged during these events. This Provision also contains specific notification and monitoring requirements to assess immediate and continued impacts to water quality when these events happen.

This section of the Permit acknowledges that in cases of emergency discharge, such as from firefighting and disasters, priority of efforts shall be directed toward life, property, and the environment, in that order. Therefore, Permittees are required to implement BMPs that do not interfere with immediate emergency response operations or impact public health and safety. Reporting requirements for such events shall be determined by Water Board staff on a case-by-case basis.

Provision C.15.b.iv. Individual Residential Car Washing. Soaps and automotive pollutants such as oil and metals can be discharged into storm drains and waterbodies from individual residential car washing activities. However, it is not feasible to prohibit individual residential car washing because it would require too much resources for the Permittees to regulate the prohibition. This section of the Permit requires Permittees to encourage residents to implement BMPs such as directing car washwaters to landscaped areas, using as little detergent as possible, and washing cars at commercial car washing facilities.

Provision C.15.b.v. Swimming Pool, Hot tub, Spa, and Fountain Water Discharges. These types of discharges can potentially contain high levels of chlorine and copper. Permittees shall prohibit the discharge of such waters that contain chlorine residual, copper algaecide, filter backwash, or other pollutants to the storm drains or to waterbodies. High flow rates into the storm drain or waterbody could cause erosion and scouring of the stream or creek banks. These types of discharges should be directed to landscaped areas large enough to accommodate the volume or to the sanitary sewer, with the local sanitary sewer's approval. If these discharge options are not feasible and the swimming pool, hot tub, spa, or fountain water discharges must enter the storm drain, they must be dechlorinated to non-detectable levels of chlorine and they must not contain copper algaecide. Flow rate should be regulated to minimize downstream erosion and scouring. We strongly encourage local sanitary sewer agencies to accept these types of non-stormwater discharges, especially for new and rebuilt ones where a connection could be achieved with marginal effort. This Provision also requires Permittees to coordinate with local sanitary agencies in these efforts.

Provision C.15.b.v.i. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering. Fertilizers and pesticides can be washed off of landscaping and discharged into storm drains and waterbodies. However, it is not feasible to prohibit excessive irrigation because it would require too much resource for the Permittees to regulate such a prohibition. It is also not feasible for individual Permittees to ban the use fertilizers and pesticides. This section of the Permit requires Permittees to promote and/or work with potable water purveyors to promote measures that minimize runoff and pollutant loading from excess irrigation, such as conservation programs, outreach regarding overwatering and less toxic options for pest control and landscape management, the use of drought tolerant and native vegetation, and to implement appropriate illicit discharge response and enforcement for ongoing, large-volume landscape irrigation runoff to the storm drains.

Provision C.15.b.vii. requires Permittees to identify and describe additional types and categories of discharges not listed in Provision C.15.b., that they propose to conditionally exempt from Prohibition A.1., in periodic submittals to the Executive Officer.

Provision C.15.b.viii. establishes a mechanism to authorize under the Permit non-stormwater discharges owned or operated by the Permittees.

Attachment J: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment J:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in federal NPDES regulation 40 CFR 122.41.

Attachment J includes Standard Provisions. These Standard Provisions ensure that NPDES stormwater permits are consistent and compatible with USEPA's federal regulations. Some Standard Provision sections specific to publicly owned sewage treatment works are not included in Attachment J.

Fact Sheet Attachment 6.1
Construction Inspection Data

Construction Inspection Data

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Runon and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	9/30/08	Dry	0	Written Notice			x					Driveway not stabilized				
Panoramic Views	10/15/08	Dry	0.5										x			50' of driveway rocked.
Panoramic Views	11/15/08	Rain	3	Stop Work	x		x				x	Uncovered graded lots eroding; Sediment entering a stormdrain that didn't have adequate protection.				
Panoramic Views	11/15/08	Drizzling	0.25										x			Lots blanketed. Storm drains pumped. Street cleaned.
Panoramic Views	12/1/08	Dry	4	Verbal Warning					x			Porta potty next to stormdrain.	x			Porta potty moved away from stormdrain.
Panoramic Views	1/15/08	Rain	3.25	Written Warning	x					x		Fiber rolls need maintenance; Tire wash water flowing into street				
Panoramic Views	1/25/09	Dry	0										x			Fiber rolls replaced.

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed						Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time					
					Erosion Control	Runon and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management		Illicit Discharge	Problems Fixed	Need More Time		Escalate Enforcement				
Panoramic Views	2/28/09	Rain	2.4	Stop Work	x		x													
Panoramic Views	2/28/09	Rain	0.1											x						Fiber rolls replaced. Silt fences added. More stormdrains protected. Streets cleaned. Slope too soggy to access.
Panoramic Views	3/15/09	Dry	1	Citation with Fine					x		x	Paint brush washing not designated	x							Street and storm drains cleaned. Slopes blanketed.
Panoramic Views	4/1/09	Dry	0.5	Citation with Fine							x	Concrete washout overflowed; Evidence of illicit discharge								
Panoramic Views	4/15/09	Dry	0										x							Concrete washout replaced; Storm drain and line cleaned.

Fact Sheet Attachment 10.1

303(d) Trash Resolution and Staff Report February 2009

Available at

http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0008.pdf

ATTACHMENT A

Provision C.3.b. Sample Reporting Table

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/08 to 06/09
City of Eden Annual Report FY 2008-09**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
Private Projects													
Nirvana Estates; Project #06-122; Property bounded by Paradise Lane, Serenity Drive, and Eternity Circle; Eden, CA	Heavenly Homes; Phase 1; Construction of 156 single-family homes and 45 townhomes with commercial shops and underground parking.	Runoff from site drains to Babbling Brook	25 acres site area, 21 acres disturbed	20 acres new	20 acres post-project	Application submitted 12/29/07, Application deemed complete 1/30/08, Project approved 7/16/08	Stenciled inlets, street sweeping, covered parking, car wash pad drains to sanitary sewer	Pervious pavement for all driveways, sidewalks, and commercial plaza	vegetated swales, detention basins,	Conditions of Approval require Homeowners Association to perform regular maintenance. Written record will be made available to City inspectors.	WEF Method	n/a	Contra Costa sizing charts used to design detention basin at Peace Park. Also contributed to in-stream projects in Babbling Brook
Barter Heaven; Project #05-345; Shoppers Lane & Bargain Avenue; 14578 Shoppers Lane, Eden, CA	Deals Galore Development Co.; Demolition of strip mall and parking lot and construction of 500-unit 5-story shopping mall with underground parking and limited outdoor parking.	Runoff from site drains to Bargain River	5 acres site area, 3 acres disturbed	1 acre new, 2 acres replaced	3.5 acres pre-project, 4.5 acres post-project	Application submitted 7/9/08, Application deemed complete 8/2/08, Project approved 12/12/08	Stenciled inlets, trash enclosures, underground parking, street sweeping	One-way aisles to minimize outdoor parking footprint; roof drains to planter boxes	tree wells with bioretention; planter boxes with bioretention	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	\$ 250,000 paid to Renew Regional Project sponsored by Riverworks Foundation, 243 Water Way, Eden, CA 408-345-6789	Renew Project includes treatment and HM Controls

**Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/08 to 06/09
City of Eden Annual Report FY 2008-09**

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No., ¹ Project Type & Description	Project Watershed ²	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area ³	Total Pre- and Post-Project Impervious Surface Area ⁴	Status of Project ⁵	Source Control Measures	Site Design Measures	Treatment Systems Installed ⁶	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures ^{7,8}	HM Controls ^{9,10}
New Beginnings; Project No. #05-456; Hope Street & Chance Road; 567 Hope Boulevard, Eden, CA	Fresh Start Corporation; Demolition of abandoned warehouse and construction of a 5-story building with 250 low-income rental housing units.	Runoff from site drains to Poor Man Creek	5 acres site area, 100,000 ft ² disturbed	1 acre replaced	2 acres pre-project, 1 acre post-project	Application submitted 2/9/09, Application deemed complete 4/10/09; Project approved 6/30/09	Trash enclosures, underground parking, street sweeping, car wash pad drains to sanitary sewer	roof drains to landscaping	parking runoff flows to six bioretention units/gardens	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	n/a	n/a
Public Projects													
Gridlock Relief, Project No. #05-99, ABC Blvd between Main and Huett Streets, Eden, CA	City of Eden. Widening of ABC Blvd from 4 to 6 lanes	Runoff from site drains to Congestion River	6 acres site area, 3 acres disturbed	2 acres new, 1 acre replaced	4 acres pre-project, 6 acres post-project	Application submitted 7/9/06, Application deemed complete 10/6/08, Project approved 12/9/08, Construction scheduled to begin 7/10/09	none	ABC Blvd sloped to drain runoff into landscaped areas in median	Runoff leaving underdrain system of landscaped median is pumped to bioretention gardens along either side of ABC Blvd	Signed statement from City of Eden assuming post-construction responsibility for treatment BMP maintenance.	WEF Method	n/a	BAHM used to design and size stormwater treatment units so that increased runoff is detained.

Sample Reporting Table C.3.b. Footnotes

1. If a project is being constructed in Phases, use a separate row entry for each Phase.
2. State the watershed(s) that the Regulated Project drains to. Optional but recommended: Also state the downstream watershed(s).
3. State both the total new impervious surface area and the total replaced impervious surface area, as applicable.
4. For redevelopment projects state both the pre-project impervious surface area and the post-project impervious surface area.
5. State project application date; application deemed complete date; and final, major, staff-level discretionary review and approval date.
6. List stormwater treatment system(s) installed onsite or at a joint stormwater treatment system facility.
7. For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
8. For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.
9. If HM control is not required, state why not.
10. If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

Instructions for Provision C.3.b. Sample Reporting Table

1. **Project Name, Number, Location, and Street Address** – Include the following information:
 - Name of the project
 - Number of the project (if applicable)
 - Location of the project with cross streets
 - Street address of the project (if available)

2. **Name of Developer, Project Phase Number, Project Type, and Project Description** – Include the following information:
 - Name of the developer
 - Project phase name and/or number (only if the project is being developed in phases) – each phase should have a separate row entry
 - Type of development (i.e., new and/or redevelopment)
 - Description of development (e.g., 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse)

3. **Project Watershed**
 - State the watershed(s) that the Project drains into
 - Optional but recommended: Also state the downstream watershed(s)

4. **Total Site Area and Total Area of Land Disturbed** – State the total site area and the total area of land disturbed.

5. **Total New and/or Replaced Impervious Surface Area**
 - State the total new impervious surface area
 - State the total replaced impervious surface area, as applicable

6. **Total Pre- and Post-Project Impervious Surface Area** – For redevelopment projects, state both the pre-project impervious surface area and the post-project impervious surface area.

7. **Status of Project** – Include the following information:
 - Project application submittal date
 - Project application deemed complete date
 - Final, major, staff-level discretionary review and approval date

8. **Source Control Measures** – List all source control measures that have been or will be included in the project.

9. **Site Design Measures** – List all site design measures that have been or will be included in the project.
10. **Treatment Systems Installed** – List all post-construction stormwater treatment system(s) installed onsite and/or at a joint stormwater treatment system facility.
11. **Operation and Maintenance Responsibility Mechanism** – List the legal mechanism(s) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
12. **Hydraulic Sizing Criteria Used** – List the hydraulic sizing criteria used for the Project.
13. **Alternative Compliance Measures**
 - **Option 1: LID Treatment at an Offsite Location (Provision C.3.e.i.(1))** – On a separate page, give a discussion of the alternative compliance project including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
 - **Option 2: Payment of In-Lieu Fees (Provision C.3.e.i.(2))** – On a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii).
14. **HM Controls**
 - If HM control is not required, state why not
 - If HM control is required, state control method used (e.g., method to design and size device(s), method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basins, or in-stream control)

ATTACHMENT B

Provision C.3.g. Alameda Permittees Hydromodification Management Requirements

Alameda Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

- a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow¹²³ up to the pre-project 10-year peak flow, except where the lower endpoint of this range is modified as described in Section 6 of this Attachment.
- b. *Goodness of fit criteria:* The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Q_{cp} ¹²⁴) shall be no greater than 10 percent of the pre-project 2-year peak flow unless a modified value is substantiated by analysis of actual channel resistance in accordance with an approved User Guide as described in Section 6 of this Attachment.
- d. *Standard HM modeling:* On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM¹²⁵) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User's Manual.¹²⁶ Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with the requirements of this Attachment and Provision C.3.f.
- e. *Alternate HM modeling and design:* The project proponent may use a continuous simulation hydrologic computer model¹²⁷ to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the

¹²³ Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

¹²⁴ Q_{cp} is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

¹²⁵ *The Bay Area Hydrology Model – A Tool for Analyzing Hydromodification Effects of Development Projects and Sizing Solutions*, Bicknell, J., D. Beyerlein, and A. Feng, September 26, 2006. Available at http://www.scvurppp-w2k.com/permit_c3_docs/Bicknell-Beyerlein-Feng_CASQA_Paper_9-26-06.pdf

¹²⁶ *The Bay Area Hydrology Model – A Tool for Analyzing Hydromodification Effects of Development Projects and Sizing Solutions*, Bicknell, J., D. Beyerlein, and A. Feng, September 26, 2006. Available at http://www.scvurppp-w2k.com/permit_c3_docs/Bicknell-Beyerlein-Feng_CASQA_Paper_9-26-06.pdf

¹²⁷ Such models include US EPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Surface Water Management Model (SWMM).

pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a-e above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain¹²⁸ runoff to the maximum extent practicable. In addition, the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

- a. *Reasonable cost:* To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.
- b. *Regional HM controls:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.
- c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.
- d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure that is not otherwise required by the Water Board or other regulatory agency. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

- a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- b. For projects using standard sizing charts, a summary of sizing calculations used;
- c. For projects using the BAHM, a listing of model inputs;

¹²⁸ Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media and include bioretention units, bioswales, basins, planter boxes, tree wells, media filters, and green roofs.

- d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);
- e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM Project (name, location, date of start up, entity responsible for maintenance); and
- f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are in areas of HM applicability shown in the Alameda Permittees' HM Map.¹²⁹ (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mr/p/Final%20TO%20HM%20Maps.pdf). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

To assist in location and evaluation of project applicability, the Alameda Permittees' HM Map depicts a number of features including the following:

- Hardened channels and culverts at least 24 inches in diameter (green solid or dashed lines);
- Natural channels (red lines);
- Boundaries of major watersheds (light blue lines); and
- Surface streets and highways (gray or black lines).

These data are of varying age, precision and accuracy and are not intended for legal description or engineering design. Watersheds extending beyond the County boundaries are shown for illustration purposes only. Project proponents are responsible for verifying and describing actual conditions of site location and drainage.

5. Alameda Permittees' HM Map is color-coded as follows:

- a. **Solid pink areas** – Solid pink designates hilly areas, where high slopes (greater than 25 percent) occur. The HM Standard and all associated requirements apply in areas shown in solid pink on the map. In this area, the HM Standard does *not* apply if a project proponent demonstrates that all project runoff will flow through enclosed storm drains, existing concrete culverts, or fully hardened (with bed and banks continuously concrete-lined) channels to the tidal area shown in light gray.
- b. **Purple/red hatched areas** – These are upstream of areas where hydromodification impacts are of concern because of factors such as bank instability, sensitive habitat, or restoration projects. The HM Standard and all associated requirements apply in areas

¹²⁹ The watercourses potentially susceptible to hydromodification impacts are identified based on an assessment approach developed by Balance Hydrologics (2003).

shown in purple/red (printer-dependant) hatch marking on the map. Projects in these areas may be subject to additional agency reviews related to hydrologic, habitat or other watershed-specific concerns.

- c. **Solid white areas** – Solid white designates the land area between the hills and the tidal zone. This area may be susceptible to hydromodification unless the site is connected to storm drains that discharge to the tidal area. The HM Standard and all associated requirements apply to projects in solid white areas *unless* a project proponent demonstrates that all project runoff will flow through fully hardened channels.¹³⁰ Short segments of engineered earthen channels (length less than 10 times the maximum width of trapezoidal cross-section) can be considered resistant to erosion if located downstream of a concrete channel of similar or greater length and comparable cross-sectional dimensions. Plans to restore a hardened channel may affect the HM Standard applicability in this area.
- d. **Solid gray areas** – Solid gray designates areas where streams or channels are tidally influenced or primarily depositional near their outfall in San Francisco Bay. The HM Standard does not apply to projects in this area. Plans to restore a hardened channel may affect the HM Standard applicability in this area.
- e. **Dark gray, Eastern County area** – Dark gray designates the portion of eastern Alameda County that lies outside the discharge area of this NPDES permit. This area is in the Central Valley Regional Water Quality Control Board's jurisdiction.

6. Potential Exceptions to Alameda Permittees' HM Map Designations

The Program may choose to prepare a User Guide¹³¹ to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This User Guide would reiterate and collate established stream stability assessment methods that have been presented in the Program's HMP.¹³² After the Program has collated its methods into a User Guide format, received approval of the User Guide from the Executive Officer,¹³³ and informed the public through such process as an electronic mailing list, the Permittees may use the User Guide to guide preparation of technical reports for the following: implementing the HM Standard using in-stream or regional HM controls; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in these requirements); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Qcp for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow). In no case shall the design value of Qcp exceed 50 percent of the 2-year pre-project flow.

¹³⁰ In this paragraph, *fully hardened channels* include enclosed storm drains, existing concrete culverts, or channels whose bed and banks are continuously concrete-lined to the tidal area shown in light gray on the map.

¹³¹ The User Guide may be offered under a different title.

¹³² The Program's HMP has undergone Water Board staff review and been subject to public notice and comment.

¹³³ The User Guide shall not introduce a new concept, but rather reformat existing methods; therefore, Executive Officer approval is appropriate.

ATTACHMENT C

Provision C.3.g. Contra Costa Permittees Hydromodification Management Requirements

Contra Costa Permittees Hydromodification Management Requirements

1. Demonstrating Compliance with the Hydromodification Management (HM) Standard

Contra Costa Permittees shall ensure that project proponents shall demonstrate compliance with the HM Standard by demonstrating that any one of the following four options is met:

- a. *No increase in impervious area.* The project proponent may compare the project design to the pre-project condition and show that the project will not increase impervious area and also will not facilitate the efficiency of drainage collection and conveyance.
- b. *Implementation of hydrograph modification IMPs.* The project proponent may select and size IMPs to manage hydrograph modification impacts, using the design procedure, criteria, and sizing factors specified in the Contra Costa Clean Water Program's *Stormwater C.3 Guidebook*. The use of flow-through planters shall be limited to upper-story plazas, adjacent to building foundations, on slopes where infiltration could impair geotechnical stability, or in similar situations where geotechnical issues prevent use of IMPs that allow infiltration to native soils. Limited soil infiltration capacity in itself does not make use of other IMPs infeasible.
- c. *Estimated post-project runoff durations and peak flows do not exceed pre-project durations and peak flows.* The project proponent may use a continuous simulation hydrologic computer model such as USEPA's Hydrograph Simulation Program—Fortran (HSPF) to simulate pre-project and post-project runoff, including the effect of proposed IMPs, detention basins, or other stormwater management facilities. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, using limitations and instructions provided in the Program's *Stormwater C.3 Guidebook*, and shall show that the following criteria are met:
 - i. For flow rates from 10 percent of the pre-project 2-year runoff event (0.1Q₂) to the pre-project 10-year runoff event (Q₁₀), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10 percent over more than 10 percent of the length of the flow duration curve.
 - ii. For flow rates from 0.5Q₂ to Q₂, the post-project *peak flows* shall not exceed pre-project peak flows. For flow rates from Q₂ to Q₁₀, post-project peak flows may exceed pre-project flows by up to 10 percent for a 1-year frequency interval. For example, post-project flows could exceed pre-project flows by up to 10 percent for the interval from Q₉ to Q₁₀ or from Q_{5.5} to Q_{6.5}, but not from Q₈ to Q₁₀.

d. *Projected increases in runoff peaks and durations will not accelerate erosion of receiving stream reaches.* The project proponent may show that, because of the specific characteristics of the stream receiving runoff from the project site, or because of proposed stream restoration projects, or both, there is little likelihood that the cumulative impacts from new development could increase the net rate of stream erosion to the extent that beneficial uses would be significantly impacted. To use this option, the project proponent shall evaluate the receiving stream to determine the relative risk of erosion impacts and take the appropriate actions as described below and in Table A-1. Projects 20 acres or larger in total area shall not use the medium risk methodology in (d)ii below.

i. **Low Risk.** In a report or letter report, signed by an engineer or qualified environmental professional, the project proponent shall show that all downstream channels between the project site and the Bay/Delta fall into one of the following *low-risk* categories.

(1) Enclosed pipes.

(2) Channels with continuous hardened beds and banks engineered to withstand erosive forces and composed of concrete, engineered riprap, sackcrete, gabions, mats, and such. This category excludes channels where hardened beds and banks are not engineered continuous installations (i.e., have been installed in response to localized bank failure or erosion).

(3) Channels subject to tidal action.

(4) Channels shown to be aggrading (i.e., consistently subject to accumulation of sediments over decades) and to have no indications of erosion on the channel banks.

ii. **Medium Risk.** Medium risk channels are those where the boundary shear stress could exceed critical shear stress as a result of hydrograph modification but where either the sensitivity of the boundary shear stress to flow is low (e.g., an oversized channel with high width to depth ratios) or where the resistance of the channel materials is relatively high (e.g., cobble or boulder beds and vegetated banks). In *medium-risk* channels, accelerated erosion due to increased watershed imperviousness is not likely but is possible, and the uncertainties can be more easily and effectively addressed by mitigation than by additional study.

In a preliminary report, the project proponent's engineer or qualified environmental professional shall apply the Program's *Basic Geomorphic Assessment*¹³⁴ methods and criteria to show each downstream reach between the project site and the Bay/Delta is either at *low-risk* or *medium-risk* of accelerated erosion due to watershed development. In a following, detailed report, a qualified stream geomorphologist¹³⁵ shall use the Program's Basic Geomorphic Assessment methods and criteria, available information, and current field data to evaluate each *medium-risk* reach. For each *medium-risk* reach, the detailed report shall show one of the following:

¹³⁴ Contra Costa Clean Water Program *Hydrograph Modification Management Plan*, May 15, 2005, Attachment 4, pp. 6-13. This method must be made available in the Program's *Stormwater C.3 Guidebook*.

¹³⁵ Typically, detailed studies will be conducted by a stream geomorphologist retained by the lead agency (or, on the lead agency's request, another public agency such as the Contra Costa County Flood Control and Water Conservation District) and paid for by the project proponent.

- (1) A detailed analysis, using the Program's criteria, showing the particular reach may be reclassified as *low-risk*.
- (2) A detailed analysis, using the Program's criteria, confirming the *medium-risk* classification, and:
 - (a) A preliminary plan for a mitigation project for that reach to stabilize stream beds or banks, improve natural stream functions, and/or improve habitat values, and
 - (b) A commitment to implement the mitigation project timely in connection with the proposed development project (including milestones, schedule, cost estimates, and funding), and
 - (c) An opinion and supporting analysis by one or more qualified environmental professionals that the expected environmental benefits of the mitigation project substantially outweigh the potential impacts of an increase in runoff from the development project, and
 - (d) Communication, in the form of letters or meeting notes, indicating consensus among staff representatives of regulatory agencies having jurisdiction that the mitigation project is feasible and desirable. In the case of the Regional Water Board, this must be a letter, signed by the Executive Officer or designee, specifically referencing this requirement. (This is a preliminary indication of feasibility required as part of the development project's Stormwater Control Plan. All applicable permits must be obtained before the mitigation project can be implemented.)

iii. **High Risk.** High-risk channels are those where the sensitivity of boundary shear stress to flow is high (e.g., incised or entrenched channels, channels with low width-to-depth ratios, and narrow channels with levees) or where channel resistance is low (e.g., channels with fine-grained, erodible beds and banks, or with little bed or bank vegetation). In a *high-risk* channel, it is presumed that increases in runoff flows will accelerate bed and bank erosion.

To implement this option (i.e., to allow increased runoff peaks and durations to a high-risk channel), the project proponent must perform a comprehensive analysis to determine the design objectives for channel restoration and must propose a comprehensive program of in-stream measures to improve channel functions while accommodating increased flows. Specific requirements are developed case-by-case in consultation with regulatory agencies having jurisdiction. The analysis will typically involve watershed-scale continuous hydrologic modeling (including calibration with stream gauge data where possible) of pre-project and post-project runoff flows, sediment transport modeling, collection and/or analysis of field data to characterize channel morphology including analysis of bed and bank materials and bank vegetation, selection and design of in-stream structures, and project environmental permitting.

2. IMP Model Calibration and Validation

The Program shall monitor flow from Hydrograph Modification Integrated Management Practices (IMPs) to determine the accuracy of its model inputs and assumptions. Monitoring

shall be conducted with the aim of evaluating flow control effectiveness of the IMPs. The Program shall implement monitoring where feasible at future new development projects to gain insight into actual versus predicted rates and durations of flow from IMP overflows and underdrains.

At a minimum, Permittees shall monitor five locations for a minimum of two rainy seasons. If two rainy seasons are not sufficient to collect enough data to determine the accuracy of model inputs and assumptions, monitoring shall continue until such time as adequate data are collected.

Permittees shall conduct the IMP monitoring as described in the IMP Model Calibration and Validation Plan in Section 5 of this Attachment. Monitoring results shall be submitted to the Executive Officer by June 15 of each year following collection of monitoring data. If the first year's data indicate IMPs are not effectively controlling flows as modeled in the HMP, the Executive Officer may require the Program to make adjustments to the IMP sizing factors or design, or otherwise take appropriate corrective action. The Permittees shall submit an IMP Monitoring Report by August 30 of the second year¹³⁶ of monitoring. The IMP Monitoring Report shall contain, at a minimum, all the data, graphic output from model runs, and a listing of all model outputs to be adjusted, with full explanation for each. Board staff will review the IMP Monitoring Report and require the Program to make any appropriate changes to the model within a 3-month time frame.

3. Stormwater C.3 Guidebook and IMP Design Criteria

The Current Contra Costa Clean Water Program C.3 Guidebook, 4th Edition (September 2008) shall be implemented until the expiration of this permit (November 2014). Any significant changes in the designs of the IMPs, their sizing factors or manner of implementation shall be approved by the Water Board.

4. IMP Model Calibration and Validation Plan Objective

Monitoring shall be conducted with the aim of evaluating flow control effectiveness of the IMPs. The IMPs were redesigned in 2008 to meet a low flow criterion of 0.2Q₂, not 0.1Q₂, which is current HMP standard for Contra Costa County. The Program shall implement monitoring at future new development projects at a minimum of five locations and for a minimum of two rainy seasons to gain insight into actual versus predicted rates and durations of flow from IMP overflows and underdrains. If two rainy seasons are not sufficient to collect enough data to determine the accuracy of model inputs and assumptions, monitoring shall continue until such time as adequate data are collected.

- a. The Dischargers Shall Identify and Establish Monitoring Sites – Program staff shall work with municipal Co-Permittees to identify potential monitoring sites on development projects that implement IMPs. Proposed sites shall be identified during review of planning and zoning applications so that monitoring stations can be designed and constructed as part of the development project. Monitoring shall begin after the development project is complete and the site is in use.**

Criteria for appropriate sites include, but are not limited to, the following:

¹³⁶ If the monitoring extends beyond 2 years, an IMP Monitoring Report shall be submitted by August 30 annually until model calibration and validation is complete.

- To ensure applicability of results, the development project and IMPs should be typical of development sites and types of IMPs foreseen throughout the County. In particular, at least one each of the infiltration planter, flow-through planter, and *dry* swale shall be selected for monitoring.
 - The area tributary to the IMP should be clearly defined, should contain and direct runoff at all rainfall intensities to the IMP. Two monitoring locations shall contain tributary areas that are a mix of pervious and impervious areas to test the pervious area simplifying assumptions used in the HMP, Table 14, Attachment 2, page 49. If no such locations are constructed by the monitoring period, modeling of mixed (pervious and impervious) tributary areas can substitute for direct monitoring of this type of location.
 - The site shall be easily accessible at all times of day and night to allow inspection and maintenance of measurement equipment.
 - Hourly rain gauge data representative of the site's location shall be available.
- b. Documentation of Monitoring Sites** – The Dischargers shall record and report (i.e., document) pertinent information for each monitoring site. Documentation of each monitoring site shall include the following:
- Amount of tributary area;
 - Condition of roof or paving;
 - Grading and drainage to the IMP, including calculated time of concentration.
 - Locations and elevations of inlets and outlets;
 - As-built measurements of the IMP including depth of soil and gravel layers, height of underdrain pipe above the IMP floor or native soil;
 - Detailed specifications of soil and gravel layers and of filter fabric and other appurtenances; and
 - Condition of IMP surface soils and vegetation.
- c. Design, Construction, and Operation of Monitoring Sites** – The Dischargers shall ensure that IMPs selected for monitoring are equipped with a manhole, vault, or other means to install and access equipment for monitoring flows from IMP overflows and underdrains.
- Development of suitable methods for monitoring the entire range of flows may require experiment. The Program and Water Board are interested in the timing and duration of very low flows from underdrains, as well as higher flows from IMP overflows. The Dischargers shall ensure that equipment is configured to measure the entire range of flows and to avoid potential clogging of orifices used to measure low flows.
- The Dischargers shall ensure that construction of IMPs is inspected carefully to ensure that IMPs are installed as designed and to avoid potential operational problems. For example, gravel used for underdrain layers should be washed free of fines, and filter fabric should be installed without breaks.

The Dischargers shall ensure that, following construction, artificial flows are applied to the IMP to verify the IMP and monitoring equipment are operating correctly and to resolve any operational problems prior to measuring flows from actual rain storms.

The Dischargers shall ensure that monitoring equipment is properly maintained. Maintenance of monitoring equipment will require, initially, inspections during and after storms that produce runoff. The inspection and maintenance schedule may be adjusted as additional experience is gained.

d. Data to be Obtained – The Dischargers shall collect the following data for each IMP, during the monitoring period:

- Hourly rainfall and more frequent rainfall data where available;
- Hourly IMP outflow and 15-minute outflow for all time periods in which sub-hourly rainfall data are available;
- Hourly IMP inflow (if possible) and more frequent inflow (if possible) when sub-hourly rainfall data are available; and
- Notes and observations.

e. Evaluation of Data – The principal use of the monitoring data shall be a comparison of predicted to actual flows. The Dischargers shall ensure that the HSPF model is set up as it was to prepare the curves in Attachment 2 of the HMP, with appropriate adjustments for the drainage area of the IMP to be monitored and for the actual sizing and configuration of the IMP. Hourly rainfall data from observed storms shall be input to the model, and the resulting hourly predicted output recorded. Where sub-hourly rainfall data are available, the model shall be run with, and output recorded for, 15-minute time steps.

The Dischargers shall compare predicted hourly outflows to the actual hourly outflows. As more data are gathered, the Dischargers may examine aggregated data to characterize deviations from predicted performance at various storm intensities and durations.

Because high-intensity storms are rare, it will take many years to obtain a suitable number of events to evaluate IMP performance under overflow conditions. Underdrain flows will occur more frequently, but possibly only a few times a year, depending on rainfall and IMP characteristics (e.g., extent to which the IMP is oversized, and actual, rather than predicted, permeability of native soils). However, evaluating a range of rainfall events that do *not* produce underflow will help demonstrate the effectiveness of the IMP.

5. Record Keeping and Reporting

Permittees shall collect and retain the following information for all projects subject to HM requirements:

- a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- b. For projects using standard sizing charts, a summary of sizing calculations used;
- c. For projects using the BAHM, a listing of model inputs;

- d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);
 - e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and
 - f. A list and thorough technical explanation of any changes in design criteria for HM Controls, including IMPs. Permittees shall submit this list and explanation annually with the Annual Report.
6. The current Contra Costa Clean Water Program C.3 Guidebook, 4th Edition (C.3 Guidebook) (September 2008) design approach and IMPs shall be used to comply with Provision C.3.g flow requirements until this permit expires and is reissued, pending model verification studies as described below. The IMPs shall be an implementation option as the flow control implementation for development projects up to a footprint of 30 acres

By April 1, 2014, the Contra Costa Clean Water Program shall submit a proposal containing one or a combination of the following three options (a.-c.) for implementation after the expiration and reissuance of this permit:

- a. Present model verification monitoring results demonstrating that the IMPs are sufficiently oversized and perform to meet the 0.1Q2 low flow design criteria; or
- b. Present study results of Contra Costa County streams geology and other factors that support the low flow design criteria of 0.2Q2 as the limiting HMP design low flow; or
- c. Propose redesigns of the IMPs to meet the low flow design criteria of 0.1Q2 to be implemented during the next permit term.

ATTACHMENT D

Provision C.3.g. Fairfield-Suisun Permittees Hydromodification Management Requirements

Fairfield-Suisun Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

- a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 20 percent of the pre-project 2-year peak flow¹³⁷ up to the pre-project 10-year peak flow.
- b. *Goodness of fit criteria:* The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Q_{cp} ¹³⁸) shall be no greater than 20 percent of the pre-project 2-year peak flow.
- d. *Standard HM modeling:* On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM¹³⁹) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual.¹⁴⁰ Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with this Attachment and Provision C.3.g.

¹³⁷ Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA’s Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers’ Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA’s Storm Water Management Model (SWMM).

¹³⁸ Q_{cp} is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

¹³⁹ See www.bayareahydrologymodel.org, Resources

¹⁴⁰ *The Bay Area Hydrology Model User Manual* is available at <http://www.bayareahydrologymodel.org/downloads.html>.

- e. *Alternate HM modeling and design:* The project proponent may use a continuous simulation hydrologic computer model¹⁴¹ to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a–c above are met.
- f. *Sizing Charts:* The Program developed design procedures, criteria, and sizing factors for infiltration basins and bioretention units, based on a low flow rate that exceeds the allowable low flow rate. After the Program has modified its sizing factors¹⁴² to the allowable criteria, received approval of the modified sizing factors from the Executive Officer,¹⁴³ and informed the public through such mechanism as an electronic mailing list, project proponents may meet the HM Standard by using the Program’s design procedures, criteria, and sizing factors for infiltration basins and/or bioretention units.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project’s runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain¹⁴⁴ runoff to the maximum extent practicable. In addition, if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in “2.a.” below), the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

- a. *Reasonable cost:* To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d. treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.
- b. *Regional HM controls:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.
- c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project’s watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.

¹⁴¹ Such models include USEPA’s Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA’s Storm Water Management Model (SWMM).

¹⁴² Current sizing factors and design criteria are shown in Appendix D of the FSURMP HMP.

¹⁴³ The modified sizing factors will not introduce a new concept but rather make an existing compliance mechanism more stringent; therefore, Executive Officer approval is appropriate.

¹⁴⁴ Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, tree wells, media, filters, and green roofs.

- d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

- a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- b. For projects using standard sizing charts, a summary of sizing calculations used;
- c. For projects using the BAHM, a listing of model inputs;
- d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);
- e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and
- f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects discharge into the upstream reaches of Laurel or LedgeWood Creeks, as delineated in the Fairfield-Suisun Permittees' HM Maps (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

ATTACHMENT E

Provision C.3.g. San Mateo Permittees Hydromodification Management Requirements

San Mateo Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

- a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow¹⁴⁵ up to the pre-project 10-year peak flow.
- b. *Goodness of fit criteria:* The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Q_{cp} ¹⁴⁶) shall be no greater than 10 percent of the pre-project 2-year peak flow.
- d. *Standard HM modeling:* On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM¹⁴⁷) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the

¹⁴⁵ Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA’s Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers’ Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA’s Storm Water Management Model (SWMM).

¹⁴⁶ Q_{cp} is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

¹⁴⁷ See www.bayareahydrologymodel.org, Resources

most current BAHM User Manual.¹⁴⁸ Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with the requirements of Provision C.3.g.

- e. *Alternate HM modeling and design:* The project proponent may use a continuous simulation hydrologic computer model¹⁴⁹ to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a.–c. above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain¹⁵⁰ runoff to the maximum extent practicable. In addition, , if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "2.a." below), the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

- a. *Reasonable cost:* To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.
- b. *Regional HM controls:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.
- c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.
- d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or

¹⁴⁸ The Bay Area Hydrology Model User Manual is available at <http://www.bayareahydrologymodel.org/downloads.html>

¹⁴⁹ Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

¹⁵⁰ Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, tree wells, media filters, and green roofs.

in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality, or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

- a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- b. For projects using standard sizing charts, a summary of sizing calculations used;
- c. For projects using the BAHM, a listing of model inputs;
- d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);
- e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of startup, entity responsible for maintenance); and
- f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are in the HM control areas shown in the San Mateo Permittees' HM Map (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

The HM Standard and all associated requirements apply in areas that are shown in green on the map and noted in the map's key as *areas subject to HMP*. The other areas are exempt from the HM Standard because they drain to hardened channels or low gradient channels (a characteristic applicable to San Mateo County's particular shoreline properties), or are in highly developed areas. Plans to restore a hardened channel may affect areas of applicability.

Areas shown in the San Mateo Permittees' HM Map may be modified as follows:

- b. **Street Boundary Interpretation** – Streets are used to mark the boundary between areas where the HM Standard must be met and exempt areas. Parcels on the boundary street are considered within the area exempted from the hydromodification requirements. Nonetheless, there might be cases where the drainage from a particular parcel(s) on the boundary street drains westward into the hydromodification required area and, as such, any applicable project on such a parcel(s) would be subject to the hydromodification requirements.

- c. **Hardened Channel/Drainage to Exempt Area** – If drainage leaving a proposed project subject to the HM Standard is determined to flow only through a hardened channel and/or enclosed pipe along its entire length before directly discharging into a waterway in the exempt area or into tidal waters, the project would be exempted from the HM Standard and its associated requirements. The project proponent must demonstrate, in a statement signed by an engineer or qualified environmental professional, that this condition is met.
- d. **Boundary Re-Opener** – If the municipal regional permit or future permit reissuances or amendments modify the types of projects subject to the hydromodification requirements, the appropriate location for an HMP boundary or boundaries will be reevaluated at the same time.

ATTACHMENT F

Provision C.3.g. Santa Clara Permittees Hydromodification Management Requirements

Santa Clara Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

- a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow¹⁵¹ up to the pre-project 10-year peak flow, except where the lower endpoint of this range is modified as described in Section 5 of this Attachment.
- b. *Goodness of fit criteria:* The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.
- c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Q_{cp} ¹⁵²) shall be no greater than 10 percent of the pre-project 2-year peak flow unless a modified value is substantiated by analysis of actual channel resistance in accordance with an approved User Guide as described in Section 5 of this Attachment.
- d. *Standard HM modeling:* On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM¹⁵³) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the

¹⁵¹ Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA’s Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers’ Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA’s Storm Water Management Model (SWMM).

¹⁵² Q_{cp} is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

¹⁵³ See www.bayareahydrologymodel.org, Resources.

most current BAHM User Manual.¹⁵⁴ Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with this attachment and Provision C.3.g.

- e. *Alternate HM modeling and design:* The project proponent may use a continuous simulation hydrologic computer model¹⁵⁵ to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a. – c. above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a Regional HM control¹⁵⁶ within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain¹⁵⁷ runoff to the maximum extent practicable. In addition, if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "2.a." below), the project shall contribute financially to an alternative HM project as set forth below:

- a. *Reasonable cost:* To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.
- b. *Regional HM control:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional control is in place by the time of project construction.
- c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.
- d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative

¹⁵⁴ *The Bay Area Hydrology Model User Manual* is available at <http://www.bayareahydrologymodel.org/downloads.html>.

¹⁵⁵ Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

¹⁵⁶ *Regional HM controls* are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which should incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional control measure discharges.

¹⁵⁷ Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, sand filters, and green roofs.

HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

- a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- b. For projects using standard sizing charts, a summary of sizing calculations used;
- c. For projects using the BAHM, a listing of model inputs;
- d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);
- e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and
- f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are located in areas of HM applicability as described below and shown in the [Santa Clara Permittees' HM Map \(available at \[http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf\]\(http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf\)\)](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf).

- a. **Purple areas:** These areas represent catchments that drain to hardened channels that extend continuously to the Bay or to tidally influenced sections of creeks. The HM Standard and associated requirements do not apply to projects in the areas designated in purple on the map.

Plans to restore a creek reach may reintroduce the applicability of HM requirements, unless the creek restoration project is designed to accommodate the potential hydromodification impacts of future development; if this is not the case, in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

- b. **Red areas:** These areas represent catchments and subwatersheds that are greater than or equal to 65% impervious, based on existing imperviousness data sources. The HM Standard and associated requirements do not apply to projects in the areas designated in red on the map.
- c. **Pink areas:** These are areas that are under review by the Permittees for accuracy of the imperviousness data. The HM Standard and associated requirements apply to projects in areas designated as pink on the map until such time as a Permittee presents new data that indicate that the actual level of imperviousness of a particular area is greater than or equal

to 65% impervious. Any new data will be submitted to the Water Board in one coordinated submittal within one year of permit adoption.

- d. **Green area:** These areas represent catchments and subwatersheds that are less than 65% impervious and are not under review by the Permittees. The HM Standard and associated requirements apply to projects in areas designated as green on the map.

5. Potential Exceptions to Map Designations

The Program may choose to prepare a User Guide¹⁵⁸ to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This User Guide would reiterate and collate established stream stability assessment methods that have been presented in the Program's HMP.¹⁵⁹ After the Program has collated its methods into User Guide format, received approval of the User Guide from the Executive Officer,¹⁶⁰ and informed the public through such process as an electronic mailing list, the Permittees may use the User Guide to guide preparation of technical reports for the following: implementing the HM Standard using in-stream or regional controls; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in these requirements); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Qcp for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow). In no case shall the design value of Qcp exceed 50 percent of the 2-year pre-project flow.

¹⁵⁸ The User Guide may be offered under a different title.

¹⁵⁹ The Program's HMP has undergone Water Board staff review and been subject to public notice and comment.

¹⁶⁰ The User Guide will not introduce a new concept, but rather reformat existing methods; therefore, Executive Officer approval is appropriate.

ATTACHMENT G

Provision C.3.h. Sample Reporting Table

**Table C.3.h. – Operation and Maintenance of Stormwater Treatment Systems
City of Eden Annual Report FY 2008-09**

Facility/Site Inspected and Responsible Party for Maintenance	Date of Inspection	Type of Inspection (annual, follow-up, etc.)	Type of Treatment System or HM Control Inspected	Inspection Findings or Results	Enforcement Action Taken (Warning, NOV, administrative citation, etc.)	Comments
ABC Company 123 Alphabet Road San Jose	12/06/08	annual	offsite bioretention unit	proper operation	none	Unit is operating properly and is well maintained.
DEF site 234 Blossom Drive Santa Clara	12/17/08	annual	onsite media filter	ineffective filter media	verbal warning	Media filter is clogged and needs to be replaced.
	12/19/08	follow-up	onsite media filter	proper operation	none	New media filter in place and unit is operating properly.
	1/19/09	follow-up	onsite media filter	proper operation	none	Unit is operating properly.
GHI Hotel 1001 Grand Blvd 227 Touring Parkway	12/21/08	annual	onsite swales	proper operation	notice of violation	Bioretention unit #2 is badly eroded because of flow channelization. Stormwater is flowing over the eroded areas, bypassing treatment and running off into parking area.
			onsite bioretention unit #1	proper operation		
			onsite bioretention unit #2	eroded areas due to flow channelization		
	12/27/08	follow-up	onsite bioretention unit #2	proper operation	none	Entire bioretention unit #2 has been replanted and re-graded. Raining heavily but no overflow observed.
Rolling Hills Estates Homeowners' Association 543 Rolling Hill Drive Pleasanton	01/17/09	annual	onsite pond	sediment and debris accumulation	notice of violation	Pond needs sediment removal and check dam needs debris removal.
	01/24/09	follow-up	onsite pond	sediment and debris accumulation	administrative citation \$1000	Pond still a mess. Administrative citation requires maintenance within a week.
	01/31/09	follow-up	onsite pond	proper maintenance	none	Pond maintenance completed.
	02/18/09	spot inspection	onsite pond	proper operation and maintenance	none	Proper operation and maintenance.

ATTACHMENT H

Provision C.8. Status and Long-Term Monitoring Follow-up Analysis and Actions

Status and Long-Term Monitoring Follow-up Analysis and Actions for Biological Assessment, Bedded Sediment Toxicity, and Bedded Sediment Pollutants

When results from Biological Assessment, Bedded Sediment Toxicity, and/or Bedded Sediment Pollutants monitoring indicate impacts at a monitoring location, Permittees shall evaluate the extent and cause(s) of impacts to determine the potential role of urban runoff as indicated in Table H-1.

Table H-1. Sediment Triad Approach to Determining Follow-Up Actions

Chemistry Results ¹⁶¹	Toxicity Results ¹⁶²	Bioassessment Results ¹⁶³	Action
No chemicals exceed Threshold Effect Concentrations (TEC), mean Probable Effects Concentrations (PEC) quotient < 0.5 and pyrethroids < 1.0 Toxicity Unit (TU) ¹⁶⁴	No Toxicity	No indications of alterations	No action necessary
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids < 1.0 TU	Toxicity	No indications of alterations	(1) Take confirmatory sample for toxicity. (2) If toxicity repeated, attempt to identify cause and spatial extent. (3) Where impacts are under Permittee's control, take management actions to minimize upstream sources causing toxicity; initiate no later than the second fiscal year following the sampling event.

¹⁶¹ TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20-31.

¹⁶² Toxicity is exhibited when *Hyallela* survival statistically different than and < 20 percent of control.

¹⁶³ Alterations are exhibited if metrics indicate substantially degraded community.

¹⁶⁴ Toxicity Units (TU) are calculated as follows: TU = Actual concentration (organic carbon normalized) ÷ Reported *H. azteca* LC₅₀ concentration (organic concentration normalized). Weston, D.P., R.W. Holmes, J. You, and M.J. Lydy, 2005. Aquatic Toxicity Due to Residential Use of Pyrethroid Insecticides. *Environ. Science and Technology* 39(24):9778-9784.

Chemistry Results ¹⁶¹	Toxicity Results ¹⁶²	Bioassessment Results ¹⁶³	Action
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids < 1.0 TU	No Toxicity	Indications of alterations	Identify the most probable cause(s) of the alterations in biological community. Where impacts are under Permittee's control, take management actions to minimize the impacts causing physical habitat disturbance; initiate no later than the second fiscal year following the sampling event.
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids < 1.0 TU	Toxicity	Indications of alterations	(1) Identify cause(s) of impacts and spatial extent. (2) Where impacts are under Permittee's control, take management actions to minimize impacts; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	No Toxicity	Indications of alterations	(1) Identify cause of impacts. (2) Where impacts are under Permittee's control, take management actions to minimize the impacts caused by urban runoff; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	Toxicity	No indications of alterations	(1) Take confirmatory sample for toxicity. (2) If toxicity repeated, attempt to identify cause and spatial extent. (3) Where impacts are under Permittee's control, take management actions to minimize upstream sources; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	No Toxicity	No Indications of alterations	If PEC exceedance is Hg or PCBs, address under TMDLs
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	Toxicity	Indications of alterations	(1) Identify cause(s) of impacts and spatial extent. (2) Where impacts are under Permittee's control, take management actions to address impacts.

ATTACHMENT I

Provision C.8. Standard Monitoring Provisions

All monitoring activities shall meet the following requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]
2. Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, and copies of all reports required by this Order for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Water Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and,
 - f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
5. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the monitoring Provisions. [40 CFR 122.41(l)(4)(iii)]
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Permittees shall instruct its laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittee must submit documentation from the laboratory to the Water Board for approval prior to raising the ML for any priority toxic pollutant.
8. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-

compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]

9. If the discharger monitors any pollutant more frequently than required by the Permit, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the reports requested by the Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT J

Minimum Trash Capture Area and Minimum Number of Trash Hot Spots

Table 10.1 Minimum Trash Capture Area and Trash Hot Spots for Population Based Permittees

Data Source: <http://quake.abag.ca.gov/mitigation/pickdbh2.html> and Association of Bay Area Governments, 2005 ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

	Population	Retail / Wholesale Commercial Acres	Minimum Trash Capture Catchment Area (Acres) ¹⁶⁵	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ¹⁶⁶
Alameda County						
San Leandro	73,402	721	216	2	7	4
Oakland	420,183	759	228	14	8	8
Dublin	46,934	377	113	1	3	3
Emeryville	9,727	69	21	1	1	1
Albany	16,877	95	28	1	1	1
Berkeley	106,697	183	55	3	1	3
Alameda County Unincorporated.	140,825	375	112	4	3	4
Alameda	75,823	402	121	2	4	4
Fremont	213,512	698	209	7	6	7
Hayward	149,205	726	218	4	7	7
Livermore	83,604	423	127	2	4	4
Newark	43,872	314	94	1	3	3
Piedmont	11,100	1	0.3	1	1	1
Pleasanton	69,388	366	110	2	3	3
Union City	73,402	183	55	2	1	2

¹⁶⁵ 30% of Retail / Wholesale Commercial Acres

¹⁶⁶ If the hot spot # based on % commercial area is more than twice that based on population, the minimum hot spot # is double the population based #.

	Population	Retail / Wholesale Commercial Acres	Minimum Trash Capture Catchment Area (Acres) ¹⁶⁵	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ¹⁶⁶
San Mateo County						
San Mateo County Unincorporated.	65,844	71	21	2	1	2
Atherton	7,475	0	0	1	1	1
Belmont	26,078	58	17	1	1	1
Brisbane	3,861	16	5	1	1	1
Burlingame	28,867	123	37	1	1	1
Colma	1,613	106	32	1	1	1
Portola Valley	4,639	9	3	1	1	1
Daly City	106,361	242	73	3	2	3
East Palo Alto	32,897	59	18	1	1	1
Foster City	30,308	67	20	1	1	1
Half Moon Bay	13,046	49	15	1	1	1
Hillsborough	11,272	0	0	1	1	1
Menlo Park	31,490	83	25	1	1	1
Millbrae	21,387	68	20	1	1	1
Pacifica	39,616	100	30	1	1	1
Redwood City	77,269	309	93	2	3	3
San Bruno	43,444	137	41	1	1	1
San Carlos	28,857	129	39	1	1	1
San Mateo	95,776	275	82	3	2	3
South San Francisco	63,744	195	58	2	1	2
Woodside	5,625	9	3	1	1	1

	Population	Retail / Wholesale Commercial Acres	Minimum Trash Capture Catchment Area (Acres) ¹⁶⁵	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ¹⁶⁶
Contra Costa County						
Contra Costa County Unincorporated.	173,573	524	157	5	5	5
Concord	123,776	1016	305	4	10	8
Walnut Creek	65,306	329	99	2	3	3
Clayton	10,784	21	6	1	1	1
Danville	42,629	134	40	1	1	1
El Cerrito	23,320	105	32	1	1	1
Hercules	24,324	37	11	1	1	1
Lafayette	23,962	68	20	1	1	1
Martinez	36,144	142	43	1	1	1
Moraga	16,138	108	32	1	1	1
Orinda	17,542	24	7	1	1	1
Pinole	19,193	140	42	1	1	1
Pittsburg	63,652	520	156	2	5	4
Pleasant Hill	33,377	219	66	1	2	2
Richmond	103,577	391	117	3	3	3
San Pablo	31,190	131	39	1	1	1
San Ramon	59,002	274	82	1	2	2

	Population	Retail / Wholesale Commercial Acres	Minimum Trash Capture Catchment Area (Acres) ¹⁶⁵	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	Minimum # of Trash Hot Spots ¹⁶⁶
Santa Clara County						
Santa Clara County Unincorporated	99,122	270	81	3	3	3
Cupertino	55,551	213	64	2	2	2
Los Altos	28,291	65	20	1	1	1
Los Altos Hills	8,837	0	0	1	1	1
Los Gatos	30,296	163	49	1	1	1
Milpitas	69,419	457	137	2	4	4
Monte Sereno	3,579	0	0	1	1	1
Mountain View	73,932	375	112	2	3	3
Santa Clara	115,503	560	168	3	5	5
Saratoga	31,592	41	12	1	1	1
San Jose	989,496	2983	895	32	29	32
Sunnyvale	137,538	548	164	3	5	5
Palo Alto	63,367	282	84	2	2	2
Solano County						
Vallejo	120,416	559	168	4	5	5
Fairfield	106,142	486	146	3	4	4
Suisun	28,031	75	22	1	1	1
Totals	4,930,339	19057	5718	165	184	349

**Table 10-2. Non-Population Based Permittee Trash Hot Spot
 and Trash Capture Assignments**

Non population based Permittee	Number of Trash Hot Spots	Trash Capture Requirement
Santa Clara Valley Water District	12	4 trash booms or 8 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda County Flood Control Agency	9	3 trash booms or 6 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda Co. Zone 7 Flood Control Agency	3	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Contra Costa County Flood Control Agency	6	2 trash booms or 4 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
San Mateo County Flood Control District	2	1 trash booms or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Vallejo Sanitation and Flood District	1	1 trash boom or 2 outfall capture devices or equivalent measures (minimum 2 ft. diameter outfall)

ATTACHMENT K

Standard NPDES Stormwater Permit Provisions

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**Standard Provisions and Reporting Requirements
for
NPDES Stormwater Discharge Permits**

February 2009

A. GENERAL PROVISIONS

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.
2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.
3. **Duty to Comply**
 - a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.
 - b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.
 - c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]
4. **Duty to Mitigate**

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]
5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Water Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application,

or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).

6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.
7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.
8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.

9. Property Rights

This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

The Board or its authorized representatives shall be allowed:

- a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;
- b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;
- c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and
- d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

- a. Violation of any term or condition contained in the Order and Permit;
- b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;
- c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and
- d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

14. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

a. All reports required by the order and permit and other information requested by the Board or USEPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. [40 CFR 122.22(d)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

- a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
- b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Compliance Reporting

a. Planned Changes

The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

b. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance

c. Non-compliance Reporting (Twenty-four hour reporting:)

- i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent information shall be provided orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.

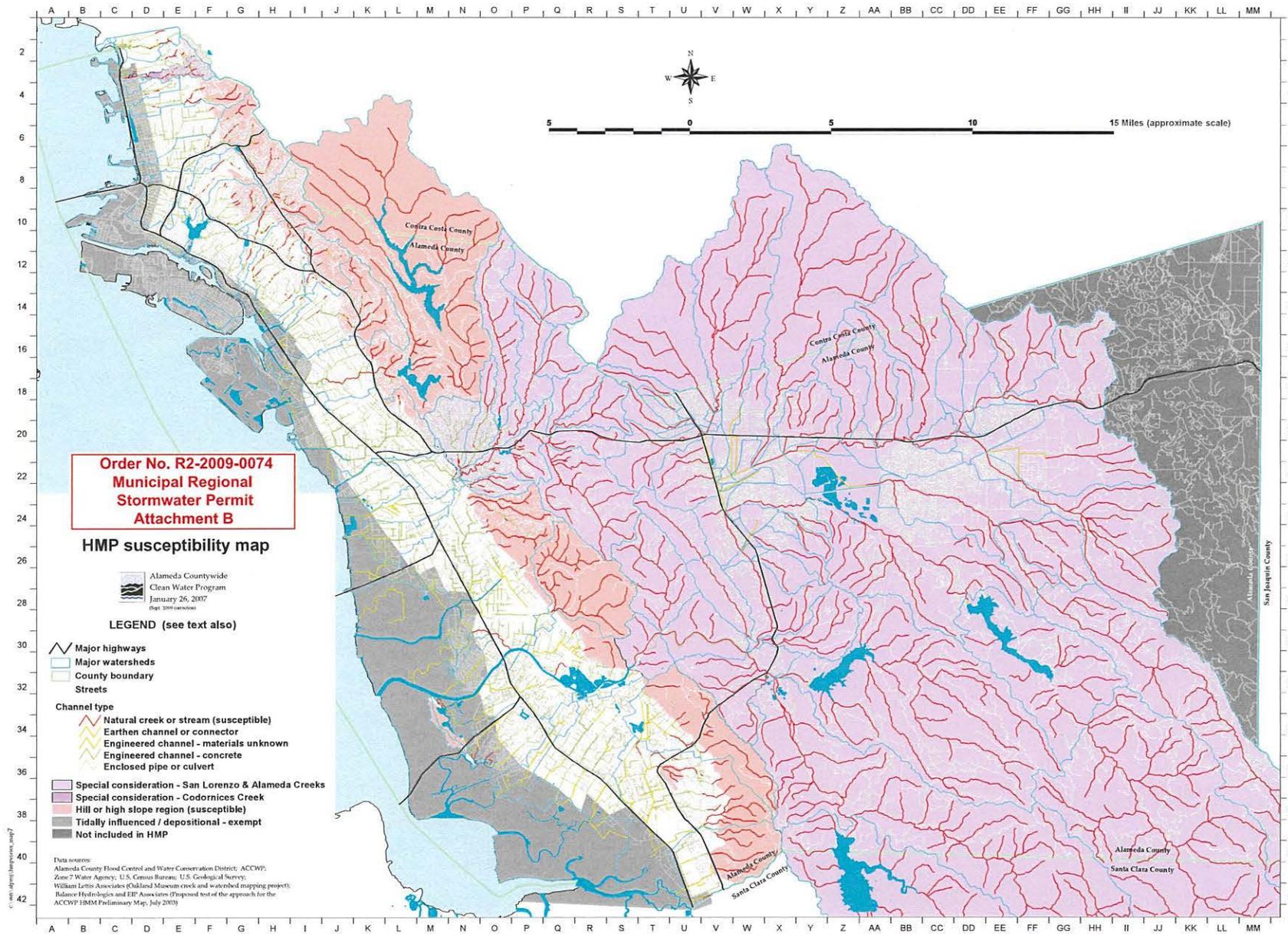
2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.
3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.
4. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order and permit.
5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:
 - a. an upset occurred and that the Permittee can identify the cause(s) or the upset;
 - b. the permitted facility was being properly operated at the time of the upset;
 - c. the discharger submitted notice of the upset as required in paragraph E.6.d.; and
 - d. the discharger complied with any remedial measures required under A.4.No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.
In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

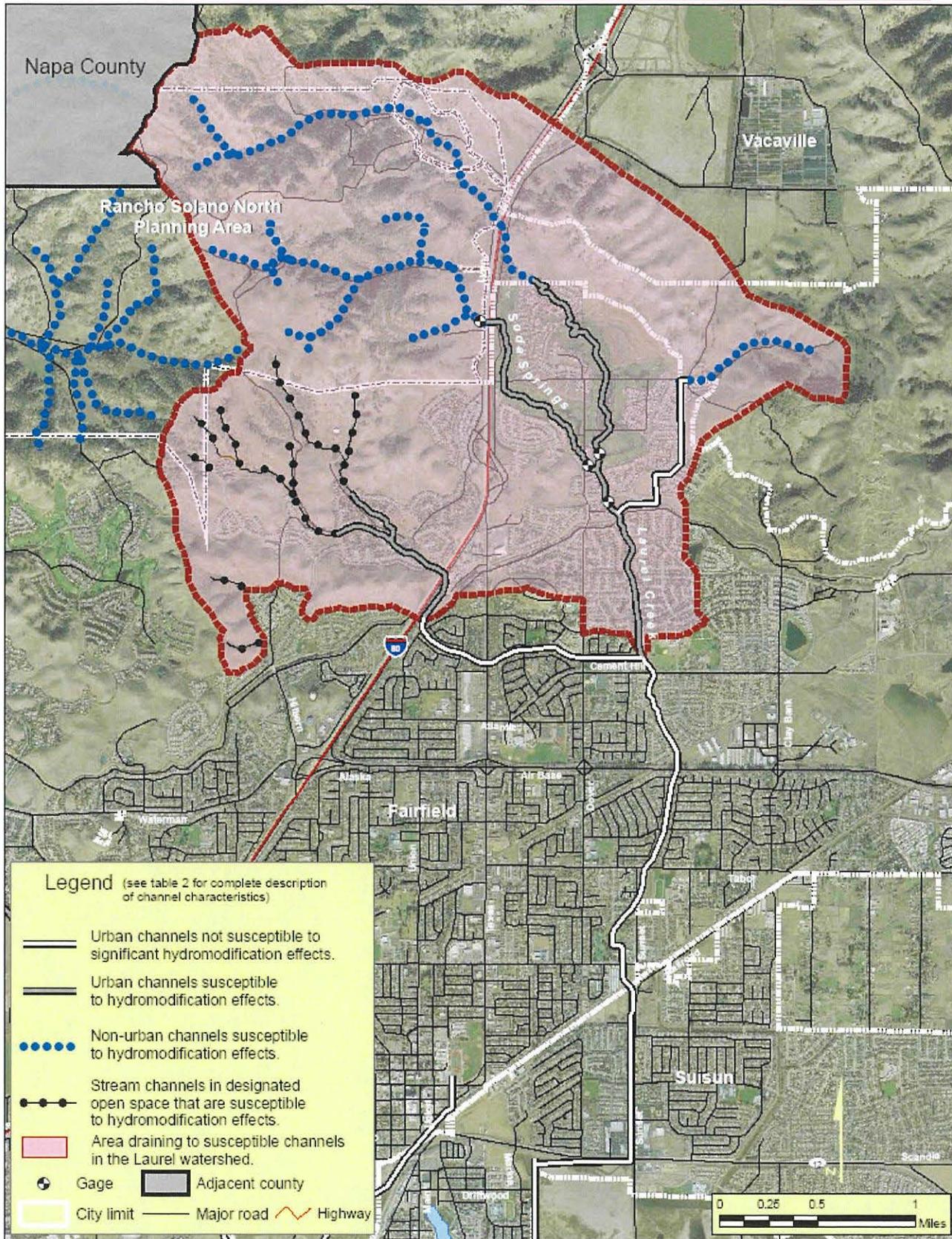
D. DEFINITIONS

1. DDT and Derivatives shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE), and DDE.
2. Duly authorized representative is one whose:
 - a. Authorization is made in writing by a principal executive officer or ranking elected official;
 - b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - c. Written authorization is submitted to the USEPA Region 9. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and USEPA Region 9 prior to

or together with any reports, information, or applications to be signed by an authorized representative.

3. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.
4. HCH shall mean the sum of the alpha, beta, gama (Lindane), and delta isomers of hexachlorocyclohexane.
5. Overflow is defined as the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g. through manholes, at pump stations, and at collection points) upstream from the plant headworks or from any treatment plant facilities.
6. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the USEPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.
7. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
8. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.
9. Total Identifiable Chlorinated hydrocarbons (TICH) shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, PCBs and other identifiable chlorinated hydrocarbons.
10. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

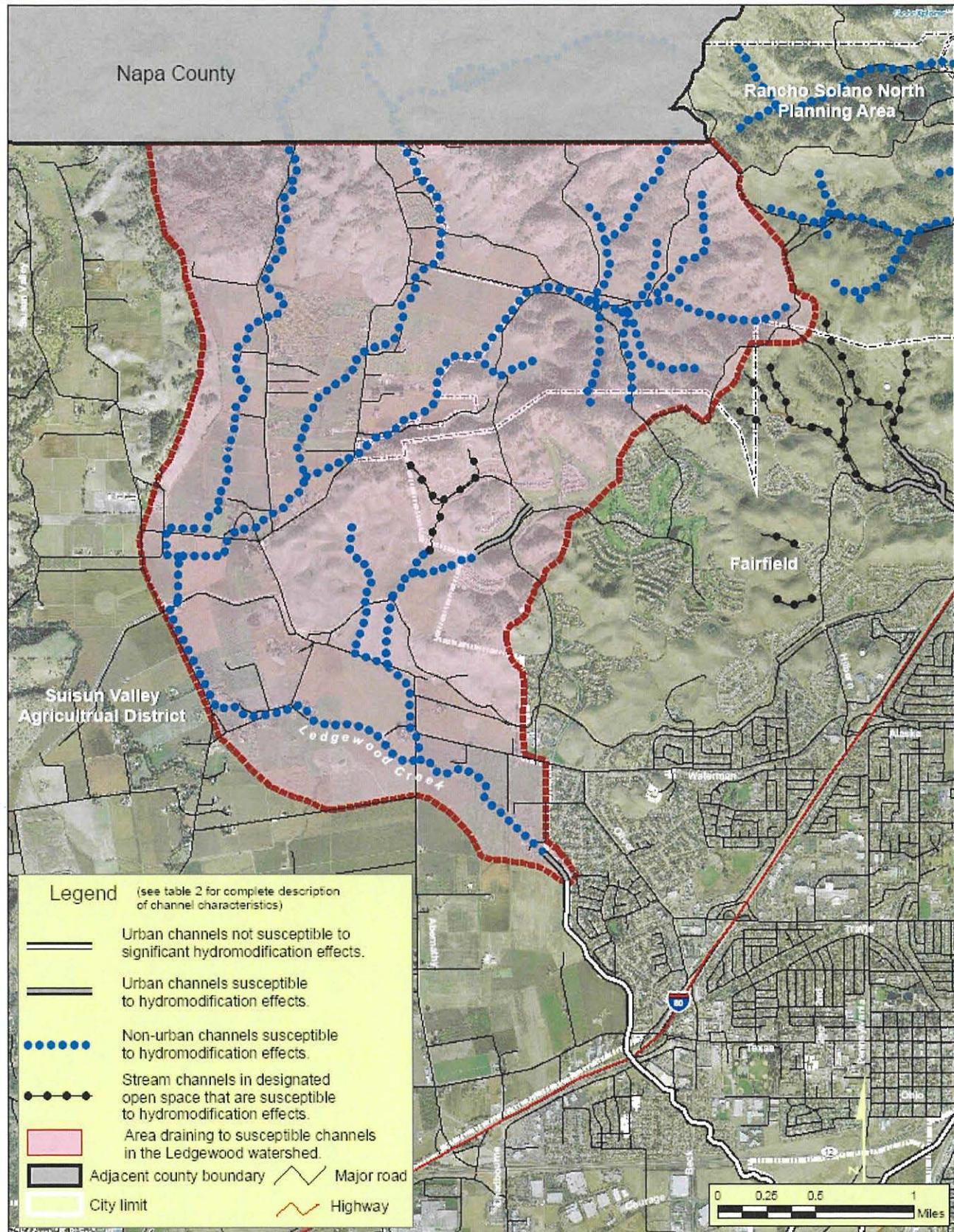




Source: Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas (north of Cement Hill Road, for example).



Figure 2. Map showing HMP channel Classification for the Laurel Creek watershed. The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map). Hydromodification controls are not required for projects that drain directly to non-susceptible urban channels.



Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas, as shown in the aerial photo.



**Balance
Hydrologics, Inc.**

Figure 3. Map showing HMP channel Classification for the Ledgewood Creek watershed.

The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map), however areas outside the City of Fairfield are not included in this permit unless annexed by the city. The non-developed areas within the current city limits are designated open space in relatively steep terrain, and are unlikely to be converted to urban areas however the HMP still applies in these areas.

**Order No. R2-2009-0074
Municipal Regional Stormwater Permit
Attachment E**

Legend

Channel Type

- Unhardened
- Hardened
- Streets
- Major Roads and Highways

Area Subject to HMP

- Area Subject to HMP

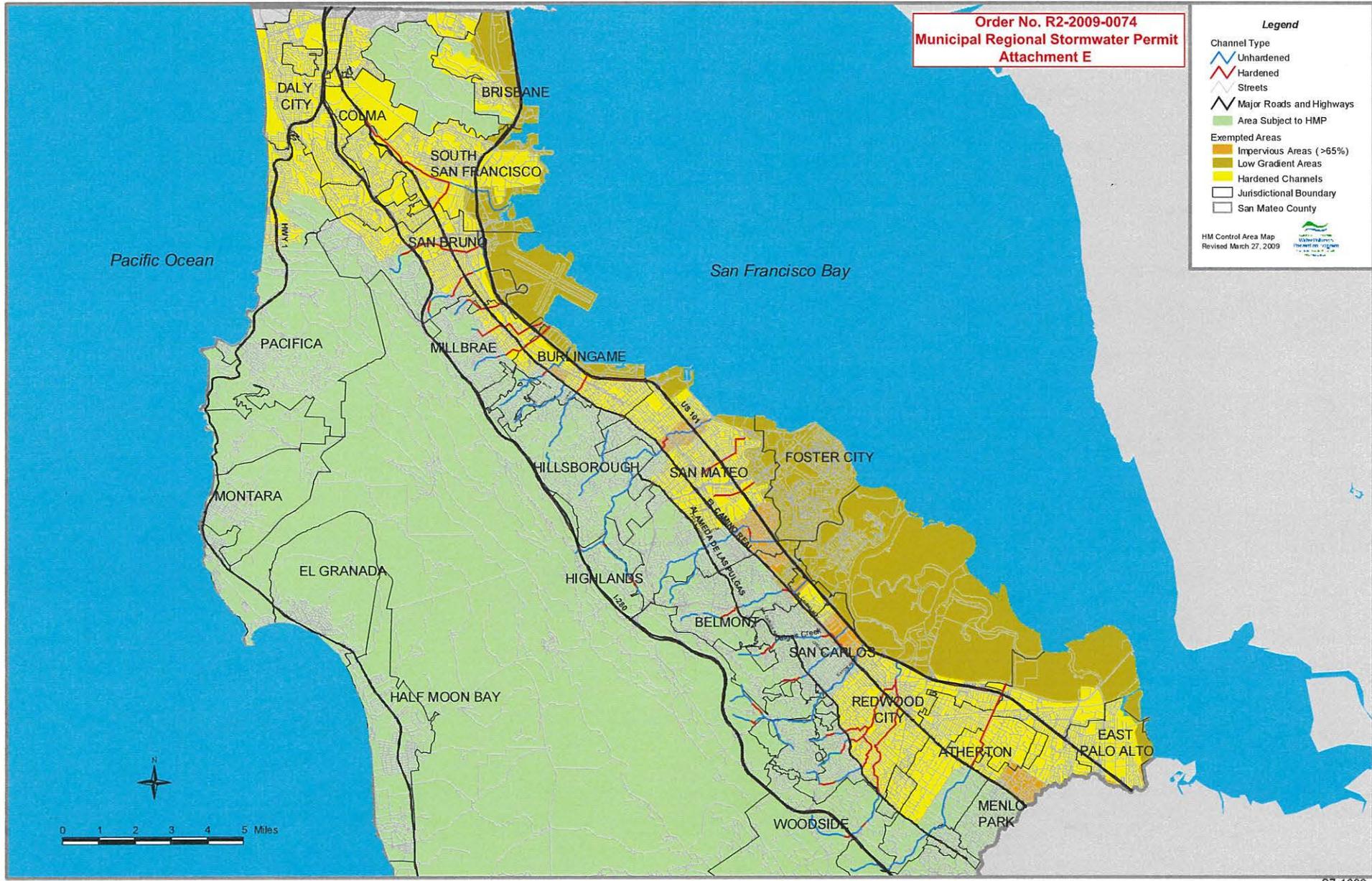
Exempted Areas

- Impervious Areas (>65%)
- Low Gradient Areas
- Hardened Channels

Jurisdictional Boundary

- San Mateo County

HM Control Area Map
Revised March 27, 2009

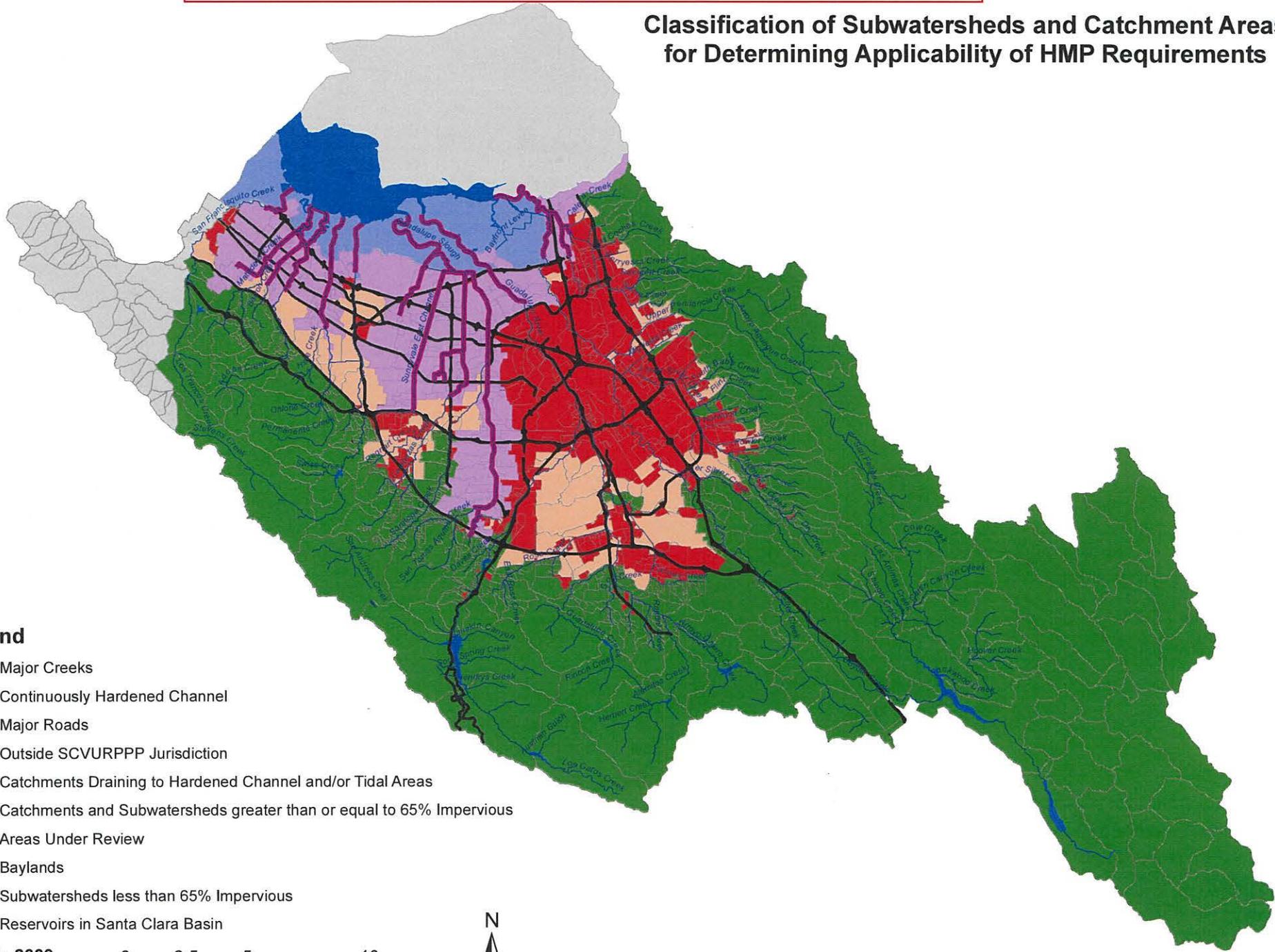


Classification of Subwatersheds and Catchment Areas for Determining Applicability of HMP Requirements

Legend

- Major Creeks
- Continuously Hardened Channel
- Major Roads
- Outside SCVURPPP Jurisdiction
- Catchments Draining to Hardened Channel and/or Tidal Areas
- Catchments and Subwatersheds greater than or equal to 65% Impervious
- Areas Under Review
- Baylands
- Subwatersheds less than 65% Impervious
- Reservoirs in Santa Clara Basin

March, 2009
SCVURPPP



This map contains: 1) a revision to the November 2007 version to correct a mapping error; and 2) two revisions to Areas Under Review in Palo Alto and North Santa Clara County to reflect updated impervious surface data, consistent with the HM applicability criteria set forth in Attachment F, Section 4 of the MRP

EXHIBIT 5
to Section 7



KeyCite Yellow Flag - Negative Treatment

Proposed Legislation

[United States Code Annotated](#)

[Title 33. Navigation and Navigable Waters \(Refs & Annos\)](#)

[Chapter 26. Water Pollution Prevention and Control \(Refs & Annos\)](#)

[Subchapter IV. Permits and Licenses \(Refs & Annos\)](#)

33 U.S.C.A. § 1342

§ 1342. National pollutant discharge elimination system

Effective: February 7, 2014

[Currentness](#)

(a) Permits for discharge of pollutants

(1) Except as provided in [sections 1328](#) and [1344](#) of this title, the Administrator may, after opportunity for public hearing issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding [section 1311\(a\)](#) of this title, upon condition that such discharge will meet either (A) all applicable requirements under [sections 1311](#), [1312](#), [1316](#), [1317](#), [1318](#), and [1343](#) of this title, or (B) prior to the taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this chapter.

(2) The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate.

(3) The permit program of the Administrator under paragraph (1) of this subsection, and permits issued thereunder, shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder under subsection (b) of this section.

(4) All permits for discharges into the navigable waters issued pursuant to [section 407](#) of this title shall be deemed to be permits issued under this subchapter, and permits issued under this subchapter shall be deemed to be permits issued under [section 407](#) of this title, and shall continue in force and effect for their term unless revoked, modified, or suspended in accordance with the provisions of this chapter.

(5) No permit for a discharge into the navigable waters shall be issued under [section 407](#) of this title after October 18, 1972. Each application for a permit under [section 407](#) of this title, pending on October 18, 1972, shall be deemed to be an application for a permit under this section. The Administrator shall authorize a State, which he determines has the capability of administering a permit program which will carry out the objectives of this chapter to issue permits for discharges into the navigable waters within the jurisdiction of such State. The Administrator may exercise the authority granted him by the preceding sentence only during the period which begins on October 18, 1972, and ends either on the ninetieth day after the date of the first promulgation of guidelines required by [section 1314\(i\)\(2\)](#) of this title, or the date of approval by the Administrator of a permit program for such State under subsection (b) of this section, whichever date first occurs, and no such authorization to a State shall extend beyond the last day of such period. Each such permit shall

be subject to such conditions as the Administrator determines are necessary to carry out the provisions of this chapter. No such permit shall issue if the Administrator objects to such issuance.

(b) State permit programs

At any time after the promulgation of the guidelines required by [subsection \(i\)\(2\) of section 1314](#) of this title, the Governor of each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the attorney for those State water pollution control agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State, or the interstate compact, as the case may be, provide adequate authority to carry out the described program. The Administrator shall approve each submitted program unless he determines that adequate authority does not exist:

(1) To issue permits which--

(A) apply, and insure compliance with, any applicable requirements of [sections 1311, 1312, 1316, 1317, and 1343](#) of this title;

(B) are for fixed terms not exceeding five years; and

(C) can be terminated or modified for cause including, but not limited to, the following:

(i) violation of any condition of the permit;

(ii) obtaining a permit by misrepresentation, or failure to disclose fully all relevant facts;

(iii) change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

(D) control the disposal of pollutants into wells;

(2)(A) To issue permits which apply, and insure compliance with, all applicable requirements of [section 1318](#) of this title; or

(B) To inspect, monitor, enter, and require reports to at least the same extent as required in [section 1318](#) of this title;

(3) To insure that the public, and any other State the waters of which may be affected, receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application;

- (4) To insure that the Administrator receives notice of each application (including a copy thereof) for a permit;
- (5) To insure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing;
- (6) To insure that no permit will be issued if, in the judgment of the Secretary of the Army acting through the Chief of Engineers, after consultation with the Secretary of the department in which the Coast Guard is operating, anchorage and navigation of any of the navigable waters would be substantially impaired thereby;
- (7) To abate violations of the permit or the permit program, including civil and criminal penalties and other ways and means of enforcement;
- (8) To insure that any permit for a discharge from a publicly owned treatment works includes conditions to require the identification in terms of character and volume of pollutants of any significant source introducing pollutants subject to pretreatment standards under [section 1317\(b\)](#) of this title into such works and a program to assure compliance with such pretreatment standards by each such source, in addition to adequate notice to the permitting agency of (A) new introductions into such works of pollutants from any source which would be a new source as defined in [section 1316](#) of this title if such source were discharging pollutants, (B) new introductions of pollutants into such works from a source which would be subject to [section 1311](#) of this title if it were discharging such pollutants, or (C) a substantial change in volume or character of pollutants being introduced into such works by a source introducing pollutants into such works at the time of issuance of the permit. Such notice shall include information on the quality and quantity of effluent to be introduced into such treatment works and any anticipated impact of such change in the quantity or quality of effluent to be discharged from such publicly owned treatment works; and
- (9) To insure that any industrial user of any publicly owned treatment works will comply with [sections 1284\(b\)](#), [1317](#), and [1318](#) of this title.

(c) Suspension of Federal program upon submission of State program; withdrawal of approval of State program; return of State program to Administrator

- (1) Not later than ninety days after the date on which a State has submitted a program (or revision thereof) pursuant to subsection (b) of this section, the Administrator shall suspend the issuance of permits under subsection (a) of this section as to those discharges subject to such program unless he determines that the State permit program does not meet the requirements of subsection (b) of this section or does not conform to the guidelines issued under [section 1314\(i\)\(2\)](#) of this title. If the Administrator so determines, he shall notify the State of any revisions or modifications necessary to conform to such requirements or guidelines.
- (2) Any State permit program under this section shall at all times be in accordance with this section and guidelines promulgated pursuant to [section 1314\(i\)\(2\)](#) of this title.

(3) Whenever the Administrator determines after public hearing that a State is not administering a program approved under this section in accordance with requirements of this section, he shall so notify the State and, if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days, the Administrator shall withdraw approval of such program. The Administrator shall not withdraw approval of any such program unless he shall first have notified the State, and made public, in writing, the reasons for such withdrawal.

(4) Limitations on partial permit program returns and withdrawals

A State may return to the Administrator administration, and the Administrator may withdraw under paragraph (3) of this subsection approval, of--

(A) a State partial permit program approved under subsection (n)(3) only if the entire permit program being administered by the State department or agency at the time is returned or withdrawn; and

(B) a State partial permit program approved under subsection (n)(4) only if an entire phased component of the permit program being administered by the State at the time is returned or withdrawn.

(d) Notification of Administrator

(1) Each State shall transmit to the Administrator a copy of each permit application received by such State and provide notice to the Administrator of every action related to the consideration of such permit application, including each permit proposed to be issued by such State.

(2) No permit shall issue (A) if the Administrator within ninety days of the date of his notification under subsection (b)(5) of this section objects in writing to the issuance of such permit, or (B) if the Administrator within ninety days of the date of transmittal of the proposed permit by the State objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter. Whenever the Administrator objects to the issuance of a permit under this paragraph such written objection shall contain a statement of the reasons for such objection and the effluent limitations and conditions which such permit would include if it were issued by the Administrator.

(3) The Administrator may, as to any permit application, waive paragraph (2) of this subsection.

(4) In any case where, after December 27, 1977, the Administrator, pursuant to paragraph (2) of this subsection, objects to the issuance of a permit, on request of the State, a public hearing shall be held by the Administrator on such objection. If the State does not resubmit such permit revised to meet such objection within 30 days after completion of the hearing, or, if no hearing is requested within 90 days after the date of such objection, the Administrator may issue the permit pursuant to subsection (a) of this section for such source in accordance with the guidelines and requirements of this chapter.

(e) Waiver of notification requirement

In accordance with guidelines promulgated pursuant to [subsection \(i\)\(2\) of section 1314](#) of this title, the Administrator is authorized to waive the requirements of subsection (d) of this section at the time he approves a program pursuant to

subsection (b) of this section for any category (including any class, type, or size within such category) of point sources within the State submitting such program.

(f) Point source categories

The Administrator shall promulgate regulations establishing categories of point sources which he determines shall not be subject to the requirements of subsection (d) of this section in any State with a program approved pursuant to subsection (b) of this section. The Administrator may distinguish among classes, types, and sizes within any category of point sources.

(g) Other regulations for safe transportation, handling, carriage, storage, and stowage of pollutants

Any permit issued under this section for the discharge of pollutants into the navigable waters from a vessel or other floating craft shall be subject to any applicable regulations promulgated by the Secretary of the department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage, and stowage of pollutants.

(h) Violation of permit conditions; restriction or prohibition upon introduction of pollutant by source not previously utilizing treatment works

In the event any condition of a permit for discharges from a treatment works (as defined in [section 1292](#) of this title) which is publicly owned is violated, a State with a program approved under subsection (b) of this section or the Administrator, where no State program is approved or where the Administrator determines pursuant to [section 1319\(a\)](#) of this title that a State with an approved program has not commenced appropriate enforcement action with respect to such permit, may proceed in a court of competent jurisdiction to restrict or prohibit the introduction of any pollutant into such treatment works by a source not utilizing such treatment works prior to the finding that such condition was violated.

(i) Federal enforcement not limited

Nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to [section 1319](#) of this title.

(j) Public information

A copy of each permit application and each permit issued under this section shall be available to the public. Such permit application or permit, or portion thereof, shall further be available on request for the purpose of reproduction.

(k) Compliance with permits

Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of [sections 1319](#) and [1365](#) of this title, with [sections 1311](#), [1312](#), [1316](#), [1317](#), and [1343](#) of this title, except any standard imposed under [section 1317](#) of this title for a toxic pollutant injurious to human health. Until December 31, 1974, in any case where a permit for discharge has been applied for pursuant to this section, but final administrative disposition of such application has not been made, such discharge shall not be a violation of (1) [section 1311](#), [1316](#), or [1342](#) of this title, or (2) [section 407](#) of this title, unless the Administrator or other plaintiff proves that final administrative disposition of such application

has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. For the 180-day period beginning on October 18, 1972, in the case of any point source discharging any pollutant or combination of pollutants immediately prior to such date which source is not subject to [section 407](#) of this title, the discharge by such source shall not be a violation of this chapter if such a source applies for a permit for discharge pursuant to this section within such 180-day period.

(l) Limitation on permit requirement

(1) Agricultural return flows

The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly, require any State to require such a permit.

(2) Stormwater runoff from oil, gas, and mining operations

The Administrator shall not require a permit under this section, nor shall the Administrator directly or indirectly require any State to require a permit, for discharges of stormwater runoff from mining operations or oil and gas exploration, production, processing, or treatment operations or transmission facilities, composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

(3) Silvicultural activities

(A) NPDES permit requirements for silvicultural activities

The Administrator shall not require a permit under this section nor directly or indirectly require any State to require a permit under this section for a discharge from runoff resulting from the conduct of the following silviculture activities conducted in accordance with standard industry practice: nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance.

(B) Other requirements

Nothing in this paragraph exempts a discharge from silvicultural activity from any permitting requirement under [section 1344](#) of this title, existing permitting requirements under section 1342 of this title, or from any other federal law.

(C) The authorization provided in Section ¹ 1365(a) of this title does not apply to any non-permitting program established under 1342(p)(6) ² of this title for the silviculture activities listed in 1342(l)(3)(A) ³ of this title, or to any other limitations that might be deemed to apply to the silviculture activities listed in 1342(l)(3)(A) ³ of this title.

(m) Additional pretreatment of conventional pollutants not required

To the extent a treatment works (as defined in [section 1292](#) of this title) which is publicly owned is not meeting the requirements of a permit issued under this section for such treatment works as a result of inadequate design or operation of such treatment works, the Administrator, in issuing a permit under this section, shall not require pretreatment by a person introducing conventional pollutants identified pursuant to [section 1314\(a\)\(4\)](#) of this title into such treatment works other than pretreatment required to assure compliance with pretreatment standards under subsection (b)(8) of this section and [section 1317\(b\)\(1\)](#) of this title. Nothing in this subsection shall affect the Administrator's authority under [sections 1317](#) and [1319](#) of this title, affect State and local authority under [sections 1317\(b\)\(4\)](#) and [1370](#) of this title, relieve such treatment works of its obligations to meet requirements established under this chapter, or otherwise preclude such works from pursuing whatever feasible options are available to meet its responsibility to comply with its permit under this section.

(n) Partial permit program

(1) State submission

The Governor of a State may submit under subsection (b) of this section a permit program for a portion of the discharges into the navigable waters in such State.

(2) Minimum coverage

A partial permit program under this subsection shall cover, at a minimum, administration of a major category of the discharges into the navigable waters of the State or a major component of the permit program required by subsection (b).

(3) Approval of major category partial permit programs

The Administrator may approve a partial permit program covering administration of a major category of discharges under this subsection if--

(A) such program represents a complete permit program and covers all of the discharges under the jurisdiction of a department or agency of the State; and

(B) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b).

(4) Approval of major component partial permit programs

The Administrator may approve under this subsection a partial and phased permit program covering administration of a major component (including discharge categories) of a State permit program required by subsection (b) if--

(A) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b); and

(B) the State submits, and the Administrator approves, a plan for the State to assume administration by phases of the remainder of the State program required by subsection (b) by a specified date not more than 5 years after submission of the partial program under this subsection and agrees to make all reasonable efforts to assume such administration by such date.

(o) Anti-backsliding

(1) General prohibition

In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under [section 1314\(b\)](#) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the basis of [section 1311\(b\)\(1\)\(C\)](#) or [section 1313\(d\)](#) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with [section 1313\(d\)\(4\)](#) of this title.

(2) Exceptions

A permit with respect to which paragraph (1) applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if--

(A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or

(ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B);

(C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) the permittee has received a permit modification under [section 1311\(c\)](#), [1311\(g\)](#), [1311\(h\)](#), [1311\(i\)](#), [1311\(k\)](#), [1311\(n\)](#), or [1326\(a\)](#) of this title; or

(E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this chapter or for reasons otherwise unrelated to water quality.

(3) Limitations

In no event may a permit with respect to which paragraph (1) applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under [section 1313](#) of this title applicable to such waters.

(p) Municipal and industrial stormwater discharges

(1) General rule

Prior to October 1, 1994, the Administrator or the State (in the case of a permit program approved under this section) shall not require a permit under this section for discharges composed entirely of stormwater.

(2) Exceptions

Paragraph (1) shall not apply with respect to the following stormwater discharges:

(A) A discharge with respect to which a permit has been issued under this section before February 4, 1987.

(B) A discharge associated with industrial activity.

(C) A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.

(D) A discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000.

(E) A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(3) Permit requirements

(A) Industrial discharges

Permits for discharges associated with industrial activity shall meet all applicable provisions of this section and [section 1311](#) of this title.

(B) Municipal discharge

Permits for discharges from municipal storm sewers--

(i) may be issued on a system- or jurisdiction-wide basis;

(ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and

(iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

(4) Permit application requirements

(A) Industrial and large municipal discharges

Not later than 2 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraphs (2)(B) and (2)(C). Applications for permits for such discharges shall be filed no later than 3 years after February 4, 1987. Not later than 4 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.

(B) Other municipal discharges

Not later than 4 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraph (2)(D). Applications for permits for such discharges shall be filed no later than 5 years after February 4, 1987. Not later than 6 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.

(5) Studies

The Administrator, in consultation with the States, shall conduct a study for the purposes of--

(A) identifying those stormwater discharges or classes of stormwater discharges for which permits are not required pursuant to paragraphs (1) and (2) of this subsection;

(B) determining, to the maximum extent practicable, the nature and extent of pollutants in such discharges; and

(C) establishing procedures and methods to control stormwater discharges to the extent necessary to mitigate impacts on water quality.

Not later than October 1, 1988, the Administrator shall submit to Congress a report on the results of the study described in subparagraphs (A) and (B). Not later than October 1, 1989, the Administrator shall submit to Congress a report on the results of the study described in subparagraph (C).

(6) Regulations

Not later than October 1, 1993, the Administrator, in consultation with State and local officials, shall issue regulations (based on the results of the studies conducted under paragraph (5)) which designate stormwater discharges, other than those discharges described in paragraph (2), to be regulated to protect water quality and shall establish a comprehensive program to regulate such designated sources. The program shall, at a minimum, (A) establish priorities, (B) establish requirements for State stormwater management programs, and (C) establish expeditious deadlines. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.

(q) Combined sewer overflows

(1) Requirement for permits, orders, and decrees

Each permit, order, or decree issued pursuant to this chapter after December 21, 2000, for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994 (in this subsection referred to as the “CSO control policy”).

(2) Water quality and designated use review guidance

Not later than July 31, 2001, and after providing notice and opportunity for public comment, the Administrator shall issue guidance to facilitate the conduct of water quality and designated use reviews for municipal combined sewer overflow receiving waters.

(3) Report

Not later than September 1, 2001, the Administrator shall transmit to Congress a report on the progress made by the Environmental Protection Agency, States, and municipalities in implementing and enforcing the CSO control policy.

(r) Discharges incidental to the normal operation of recreational vessels

No permit shall be required under this chapter by the Administrator (or a State, in the case of a permit program approved under subsection (b)) for the discharge of any graywater, bilge water, cooling water, weather deck runoff, oil water separator effluent, or effluent from properly functioning marine engines, or any other discharge that is incidental to the normal operation of a vessel, if the discharge is from a recreational vessel.

CREDIT(S)

(June 30, 1948, c. 758, Title IV, § 402, as added Pub.L. 92-500, § 2, Oct. 18, 1972, 86 Stat. 880; amended [Pub.L. 95-217](#), §§ 33(c), 50, 54(c)(1), 65, 66, Dec. 27, 1977, 91 Stat. 1577, 1588, 1591, 1599, 1600; [Pub.L. 100-4](#), Title IV, §§ 401 to 404(a), (c), formerly (d), 405, Feb. 4, 1987, 101 Stat. 65 to 67, 69; [Pub.L. 102-580](#), Title III, § 364, Oct. 31, 1992, 106 Stat. 4862; [Pub.L. 104-66](#), Title II, § 2021(e)(2), Dec. 21, 1995, 109 Stat. 727; [Pub.L. 106-554](#), § 1(a)(4) [Div. B, Title I, § 112(a)], Dec. 21, 2000, 114 Stat. 2763, 2763A-224; [Pub.L. 110-288](#), § 2, July 29, 2008, 122 Stat. 2650; [Pub.L. 113-79](#), Title XII, § 12313, Feb. 7, 2014, 128 Stat. 992.)

[Notes of Decisions \(238\)](#)

Footnotes

- 1 So in original. Probably should not be capitalized.
- 2 So in original. Probably should read “section 1342(p)(6)”.
- 3 So in original. Probably should read “section 1342(l)(3)(A)”.

33 U.S.C.A. § 1342, 33 USCA § 1342

Current through P.L. 115-40.

United States Code Annotated

Title 33. Navigation and Navigable Waters (Refs & Annos)

Chapter 26. Water Pollution Prevention and Control (Refs & Annos)

Subchapter V. General Provisions

33 U.S.C.A. § 1371

§ 1371. Authority under other laws and regulations

Currentness

(a) Impairment of authority or functions of officials and agencies; treaty provisions

This chapter shall not be construed as (1) limiting the authority or functions of any officer or agency of the United States under any other law or regulation not inconsistent with this chapter; (2) affecting or impairing the authority of the Secretary of the Army (A) to maintain navigation or (B) under the Act of March 3, 1899, (30 Stat. 1112); except that any permit issued under [section 1344](#) of this title shall be conclusive as to the effect on water quality of any discharge resulting from any activity subject to [section 403](#) of this title, or (3) affecting or impairing the provisions of any treaty of the United States.

(b) Discharges of pollutants into navigable waters

Discharges of pollutants into the navigable waters subject to the Rivers and Harbors Act of 1910 (36 Stat. 593; [33 U.S.C. 421](#)) and the Supervisory Harbors Act of 1888 (25 Stat. 209; [33 U.S.C. 441-451b](#)) shall be regulated pursuant to this chapter, and not subject to such Act of 1910 and the Act of 1888 except as to effect on navigation and anchorage.

(c) Action of the Administrator deemed major Federal action; construction of the National Environmental Policy Act of 1969

(1) Except for the provision of Federal financial assistance for the purpose of assisting the construction of publicly owned treatment works as authorized by [section 1281](#) of this title, and the issuance of a permit under [section 1342](#) of this title for the discharge of any pollutant by a new source as defined in [section 1316](#) of this title, no action of the Administrator taken pursuant to this chapter shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (83 Stat. 852) [[42 U.S.C.A. § 4321 et seq.](#)]; and

(2) Nothing in the National Environmental Policy Act of 1969 (83 Stat. 852) shall be deemed to--

(A) authorize any Federal agency authorized to license or permit the conduct of any activity which may result in the discharge of a pollutant into the navigable waters to review any effluent limitation or other requirement established pursuant to this chapter or the adequacy of any certification under [section 1341](#) of this title; or

(B) authorize any such agency to impose, as a condition precedent to the issuance of any license or permit, any effluent limitation other than any such limitation established pursuant to this chapter.

(d) Consideration of international water pollution control agreements

Notwithstanding this chapter or any other provision of law, the Administrator (1) shall not require any State to consider in the development of the ranking in order of priority of needs for the construction of treatment works (as defined in subchapter II of this chapter), any water pollution control agreement which may have been entered into between the United States and any other nation, and (2) shall not consider any such agreement in the approval of any such priority ranking.

CREDIT(S)

(June 30, 1948, c. 758, Title V, § 511, as added Pub.L. 92-500, § 2, Oct. 18, 1972, 86 Stat. 893; amended [Pub.L. 93-243](#), § 3, Jan. 2, 1974, 87 Stat. 1069.)

[Notes of Decisions \(12\)](#)

33 U.S.C.A. § 1371, 33 USCA § 1371

Current through P.L. 115-40.

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KeyCite Yellow Flag - Negative Treatment

Distinguished by [Pennsylvania Federation of Sportsmen's Clubs, Inc. v. Hess](#), 3rd Cir.(Pa.), July 24, 2002

112 S.Ct. 1046

Supreme Court of the United States

ARKANSAS, et al., Petitioners,

v.

OKLAHOMA et al.

ENVIRONMENTAL PROTECTION

AGENCY, Petitioner,

v.

OKLAHOMA et al.

Nos. 90-1262, 90-1266.

|
Argued Dec. 11, 1991.|
Decided Feb. 26, 1992.

Consolidated appeals were taken from the Environmental Protection Agency's (EPA) issuance to Arkansas city of discharge permit pursuant to National Pollutant Discharge Elimination System (NPDES) of the Clean Water Act. The Court of Appeals for the Tenth Circuit, [908 F.2d 595](#), found that the Clean Water Act did not allow permit to be issued. Certiorari was granted. The Supreme Court, Justice [Stevens](#), held that: (1) the Clean Water Act authorized the EPA's issuance of an NPDES permit to allow an Arkansas sewage treatment plant to discharge effluent into Illinois River which ultimately reached Oklahoma, and (2) EPA's interpretation of Oklahoma's water quality standards was entitled to substantial deference.

Reversed.

Opinion on remand, [962 F.2d 996](#).

West Headnotes (16)

[1] Environmental Law

[Concurrent and Conflicting Statutes or Regulations](#)

Environmental Law [Federal preemption](#)**Nuisance**

[Nature and elements of public nuisance in general](#)

States [Environment;nuclear projects](#)

In cases involving controversies between state which introduces pollutants to waterway and downstream state which objects, federal common law of nuisance and affected state's common law are preempted; only state law applicable to interstate discharge is law of state in which point source is located. Federal Water Pollution Control Act Amendments of 1972, §§ 402(b), 510, as amended, [33 U.S.C.A. §§ 1342\(b\), 1370](#).

[6 Cases that cite this headnote](#)**[2] Environmental Law** [Permit and certification proceedings](#)

States which are affected by another state's discharge of effluent into a waterway may not block issuance of discharge permit but must apply to Environmental Protection Agency (EPA) administrator, who has discretion to disapprove permit if he concludes that discharges will have undue impact on interstate waters. Federal Water Pollution Control Act Amendments of 1972, §§ 402(b), 510, as amended, [33 U.S.C.A. §§ 1342\(b\), 1370](#).

[3 Cases that cite this headnote](#)**[3] Environmental Law** [Discharge of pollutants](#)

Clean Water Act requires that permits issued by Environmental Protection Agency (EPA) allowing discharge of effluent into interstate waterway comply with requirements for permit issued under approved state plan and with section of Clean Water Act which appears to prohibit issuance of federal permit over objection of affected state unless compliance with affected state's water quality requirements can be insured. Federal Water Pollution Control Act Amendments of 1972,

§§ 401(a), (a)(2), 402, 402(a), (a)(3), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1341(a), (a)(2), 1342, 1342(a), (a)(3), (b), (d)(2).

[20 Cases that cite this headnote](#)

[4] Environmental Law

🔑 Conditions and limitations

Environmental Protection Agency (EPA) requirement for National Pollution Discharge Elimination System (NPDES) permit that discharge of effluent from Arkansas sewage treatment plant comply with Oklahoma's water quality standards was reasonable exercise of agency's statutory discretion; discharge into Illinois River would travel through Arkansas and over Oklahoma border. Federal Water Pollution Control Act Amendments of 1972, §§ 401(a), 402(a, b), as amended, 33 U.S.C.A. §§ 1341(a), 1342(a, b).

[31 Cases that cite this headnote](#)

[5] Environmental Law

🔑 Interstate pollution

Even if Clean Water Act itself did not require that discharge of effluent from one state comply with water quality standards of another, statute did not limit Environmental Protection Agency's (EPA) authority to mandate that compliance. Federal Water Pollution Control Act Amendments of 1972, §§ 401(a), 402(a, b), as amended, 33 U.S.C.A. §§ 1341(a), 1342(a, b).

[20 Cases that cite this headnote](#)

[6] Environmental Law

🔑 Conditions and limitations

Environmental Protection Agency (EPA) regulations, which provide that National Pollution Discharge Elimination System (NPDES) permit may not be issued if the imposition of conditions would not insure compliance with the applicable water quality requirements of all affected states, were a reasonable exercise of EPA's authority. Federal Water Pollution Control

Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

[32 Cases that cite this headnote](#)

[7] Environmental Law

🔑 Interstate pollution

Placing limits on affected state's direct participation in permitting decision concerning the granting of NPDES permit to discharge effluent into interstate waterways did not constrain Environmental Protection Agency's (EPA) authority to require that point source comply with downstream water quality standards. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

[28 Cases that cite this headnote](#)

[8] Environmental Law

🔑 Interstate pollution

Environmental Protection Agency's (EPA) requirement that discharge of effluent from Arkansas sewage treatment plant into Illinois River basin must comply with Oklahoma's water quality standards was reasonable exercise of agency's substantial statutory discretion. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

[8 Cases that cite this headnote](#)

[9] Environmental Law

🔑 Water Quality Standards or Plans

Clean Water Act does not prohibit any discharge of effluent that would reach waters already in violation of existing water quality standards; nothing in Act mandates complete ban, but rather vests in Environmental Protection Agency (EPA) and states broad

authority to develop long-range, area-wide programs to alleviate and eliminate existing pollution. Federal Water Pollution Control Act Amendments of 1972, § 402(h), as amended, 33 U.S.C.A. § 1342(h).

[10 Cases that cite this headnote](#)

[10] Environmental Law

🔑 [Water pollution](#)

Court of Appeals exceeded legitimate scope of judicial review of agency adjudication by finding that Environmental Protection Agency (EPA) had misinterpreted Oklahoma law with regard to discharge of effluent into interstate waterway Court of Appeals substituted its own reading of the law for EPA's and thus failed to give required substantial deference to agency's reasonable interpretation. Federal Water Pollution Control Act Amendments of 1972, §§ 208(b)(2), 301(b)(1)(C), 303(d), 402(h), as amended, 33 U.S.C.A. §§ 1288(b)(2), 1311(b)(1)(C), 1313(d), 1342(h).

[37 Cases that cite this headnote](#)

[11] Environmental Law

🔑 [Power to regulate](#)

States

🔑 [Environment;nuclear projects](#)

Interstate water pollution is controlled by federal law.

[3 Cases that cite this headnote](#)

[12] Environmental Law

🔑 [Interstate pollution](#)

Evidence supported finding by ALJ that discharge from Fayetteville, Arkansas, sewage treatment plant into interstate Illinois River basin would not violate Oklahoma water quality standards. Federal Water Pollution Control Act Amendments of 1972, §§ 208(b)(2), 301(b)(1)(C), 303(d), 402(h), as amended, 33 U.S.C.A. §§ 1288(b)(2), 1311(b)(1)(C), 1313(d), 1342(h).

[58 Cases that cite this headnote](#)

[13] Administrative Law and Procedure

🔑 [Administrative construction](#)

Environmental Law

🔑 [Scope of Inquiry on Review of Administrative Decision](#)

Environmental Protection Agency (EPA) is entitled to discretion to interpret its own regulations and those regulations are entitled to appropriate level of deference.

[4 Cases that cite this headnote](#)

[14] Administrative Law and Procedure

🔑 [Substantial evidence](#)

Court reviewing agency's adjudication should accept agency's factual findings if those findings are supported by substantial evidence in the record as a whole; court should not supplant agency's findings merely by identifying alternate findings that could be supported by substantial evidence.

[391 Cases that cite this headnote](#)

[15] Administrative Law and Procedure

🔑 [Arbitrary, unreasonable or capricious action; illegality](#)

Administrative agency ruling is "arbitrary and capricious" if agency has entirely failed to consider important aspect of problem.

[23 Cases that cite this headnote](#)

[16] Environmental Law

🔑 [Water pollution](#)

Court of Appeals made policy choice beyond its authority by ruling that, even if discharge of effluent from Arkansas sewage treatment plant would have no adverse impact on water quality, discharge into Illinois River which would flow through Oklahoma could be prohibited; it was not arbitrary for Environmental Protection Agency (EPA) to conclude, given benefits to river from

increased flow of relatively clean water, and benefits achieved in Arkansas by allowing new plant to operate as designed, that allowing discharge would be wiser.

7 Cases that cite this headnote

****1049** *Syllabus**

The Clean Water Act provides for two sets of water quality measures: effluent limitations, which are promulgated by the Environmental Protection Agency (EPA or Agency), and water quality standards, which are promulgated by the States. The Act generally prohibits the discharge of effluent into a navigable body of water unless the point source obtains a National Pollution Discharge Elimination System (NPDES) permit from a State with an EPA-approved permit program or from the EPA itself. A Fayetteville, Arkansas, sewage treatment plant received an EPA-issued permit, authorizing it to discharge effluent into a stream that ultimately reaches the Illinois River upstream from the Oklahoma border. Respondents, Oklahoma and other Oklahoma parties, challenged the permit before the EPA, alleging, *inter alia*, that the discharge violated Oklahoma water quality standards, which allow no degradation of water quality in the upper Illinois River. The EPA's Chief Judicial Officer remanded the initial affirmance of the permit by the Administrative Law Judge (ALJ), ruling that the Act requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards, and that those standards would be violated only if the record shows by a preponderance of the evidence that the discharge would cause an actual *detectable* violation of Oklahoma's water quality standards. The ALJ then made detailed findings of fact, concluding that Fayetteville had satisfied the Chief Judicial Officer's standard, and the Chief Judicial Officer sustained the permit's issuance. The Court of Appeals reversed, ruling that the Act does not allow a permit to be issued where a proposed source would discharge effluent that would contribute to conditions currently constituting a violation of applicable water quality standards. It concluded that the Illinois River was already degraded, that the Fayetteville effluent would reach the river in Oklahoma, and that the effluent would contribute to the river's deterioration even though it would not detectably affect the river's water quality.

***92** *Held:* The EPA's action was authorized by the Clean Water Act. Pp. 1052–1061.

(a) Where interstate discharge is involved, both federal common law of nuisance, *Milwaukee v. Illinois*, 451 U.S. 304, 101 S.Ct. 1784, 68 L.Ed.2d 114, and an affected State's common law, *International Paper Co. v. Ouellette*, 479 U.S. 481, 493, 107 S.Ct. 805, 812, 93 L.Ed.2d 883, are pre-empted. Affected States may not block a permit, but must apply to the EPA Administrator, who may disapprove a plan if he concludes that the discharge will have an undue impact on interstate waters. *Id.*, at 490–491, 107 S.Ct., at 809. Pp. 1052–1054.

****1050** (b) The EPA has construed the Act as requiring that EPA-issued permits comply with the requirements for a permit issued under an approved state plan and with § 401(a) of the Act, which appears to prohibit the issuance of a federal permit over the objection of an affected State unless compliance with the affected State's water quality requirements can be insured. Pp. 1054–1055.

(c) The EPA's requirement that the Fayetteville discharge comply with Oklahoma's water quality standards is a reasonable exercise of the substantial statutory discretion Congress has vested in the Agency. There is no need to address the question whether the Act requires compliance with affected States' standards, for it clearly does not limit the EPA's authority to mandate such compliance. EPA regulations, which since 1973 have required that an NPDES permit not be issued when compliance with affected States' water quality standards cannot be insured, are a reasonable exercise of the Agency's discretion and are a well-tailored means of reaching the Act's goal of achieving state water quality standards. The EPA's authority is not constrained by the limits in *Ouellette*, *supra*, concerning an affected State's direct input into the permit process, does not conflict with the Act's legislative history and statutory scheme, and is not incompatible with the balance among competing policies and interests that Congress struck in the Act. Pp. 1056–1057.

(d) Contrary to the Court of Appeals' interpretation, nothing in the Act mandates a complete ban on discharges into a waterway that is in violation of existing water quality standards. Instead, the Act vests in the EPA and the States broad authority to develop long-range,

area-wide programs to alleviate and eliminate existing pollution. Pp. 1057–1058.

(e) The Court of Appeals exceeded the legitimate scope of judicial review of an agency adjudication when it invalidated the EPA's issuance of the permit on the ground that the Agency misinterpreted Oklahoma's water quality standards. It substituted its own reading of the law for the EPA's. Thus, it failed to give substantial deference to the Agency's reasonable, consistently held interpretation of its own regulations, which incorporate the Oklahoma standards. It also disregarded well-established *93 standards for reviewing factual findings of agencies by making its own factual findings when the ALJ's findings were supported by substantial evidence. See generally *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 71 S.Ct. 456, 95 L.Ed. 456. As a result, the court's conclusion that the river's degradation was an important and relevant factor which the EPA failed to consider was based on its own erroneous interpretation of the controlling law. Had it been properly respectful of the EPA's permissible reading of the Act—that what matters is not the river's current status, but whether the proposed discharge will have a detectable effect on that status—it would not have adjudged the Agency's decision arbitrary and capricious. Pp. 1058–1061.

908 F.2d 595 (CA10 1990), reversed.

STEVENS, J., delivered the opinion for a unanimous Court.

Attorneys and Law Firms

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Robert A. Butkin, Oklahoma City, Okl., for respondents.

Opinion

*94 Justice STEVENS delivered the opinion of the Court.

Pursuant to the Clean Water Act, 86 Stat. 816, as amended, 33 U.S.C. § 1251 *et seq.*, the Environmental Protection Agency (EPA or agency) issued a discharge

permit to a new point source in Arkansas, about 39 miles upstream from the Oklahoma state line. The question presented in this litigation is whether the EPA's finding that discharges from the new source would not cause a detectable **1051 violation of Oklahoma's *95 water quality standards satisfied the EPA's duty to protect the interests of the downstream State. Disagreeing with the Court of Appeals, we hold that the Agency's action was authorized by the statute.

I

In 1985, the city of Fayetteville, Arkansas, applied to the EPA, seeking a permit for the city's new sewage treatment plant under the National Pollution Discharge Elimination System (NPDES). After the appropriate procedures, the EPA, pursuant to § 402(a)(1) of the Act, 33 U.S.C. § 1342(a)(1), issued a permit authorizing the plant to discharge up to half of its effluent (to a limit of 6.1 million gallons per day) into an unnamed stream in northwestern Arkansas.¹ That flow passes through a series of three creeks for about 17 miles, and then enters the Illinois River at a point 22 miles upstream from the Arkansas–Oklahoma border.

The permit imposed specific limitations on the quantity, content, and character of the discharge and also included a number of special conditions, including a provision that if a study then underway indicated that more stringent limitations were necessary to ensure compliance with Oklahoma's water quality standards, the permit would be modified to incorporate those limits. App. 84.

Respondents challenged this permit before the EPA, alleging, *inter alia*, that the discharge violated the Oklahoma water quality standards. Those standards provide that “no degradation [of water quality] shall be allowed” in the upper Illinois River, including the portion of the river immediately downstream from the state line.²

*96 Following a hearing, the Administrative Law Judge (ALJ) concluded that the Oklahoma standards would not be implicated unless the contested discharge had “something more than a mere *de minimis* impact” on the State's waters. He found that the discharge would not have an “undue impact” on Oklahoma's waters and, accordingly, affirmed the issuance of the permit. App. to

Pet. for Cert. in No. 90–1262, pp. 101a–103a (emphasis deleted).

On a petition for review, the EPA's Chief Judicial Officer first ruled that § 301(b)(1)(C) of the Clean Water Act “requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards.”³ *Id.*, at 116a–117a. He ****1052** then held that the Act ***97** and EPA regulations offered greater protection for the downstream State than the ALJ's “undue impact” standard suggested. He explained the proper standard as follows:

“[A] mere theoretical impairment of Oklahoma's water quality standards—*i.e.*, an infinitesimal impairment predicted through modeling but not expected to be actually detectable or measurable—should not by itself block the issuance of the permit. In this case, the permit should be upheld if the record shows by a preponderance of the evidence that the authorized discharges would not cause an actual *detectable* violation of Oklahoma's water quality standards.” *Id.*, at 117a (emphasis in original).

On remand, the ALJ made detailed findings of fact and concluded that the city had satisfied the standard set forth by the Chief Judicial Officer. Specifically, the ALJ found that there would be no detectable violation of any of the components of Oklahoma's water quality standards. *Id.*, at 127a–143 a. The Chief Judicial Officer sustained the issuance of the permit. *Id.*, at 145a–153a.

Both the petitioners in No. 90–1262 (collectively Arkansas) and the respondents in this litigation sought judicial review.⁴ Arkansas argued that the Clean Water Act did not require an Arkansas point source to comply with Oklahoma's water quality standards. Oklahoma challenged the EPA's determination that the Fayetteville discharge would not produce a detectable violation of the Oklahoma standards.

The Court of Appeals did not accept either of these arguments. The court agreed with the EPA that the statute required compliance with Oklahoma's water quality standards, ***98** see 908 F.2d 595, 602–615 (CA10 1990), and did not disagree with the Agency's determination that the discharges from the Fayetteville plant would not produce a detectable violation of those standards. *Id.*, at 631–633. Nevertheless, relying on a theory that neither

party had advanced, the Court of Appeals reversed the Agency's issuance of the Fayetteville permit. The court first ruled that the statute requires that “where a proposed source would discharge effluents that would contribute to conditions currently constituting a violation of applicable water quality standards, such [a] proposed source may not be permitted.” *Id.*, at 620. Then the court found that the Illinois River in Oklahoma was “already degraded,” that the Fayetteville effluent would reach the Illinois River in Oklahoma, and that that effluent could “be expected to contribute to the ongoing deterioration of the scenic [Illinois R]iver” in Oklahoma even though it would not detectably affect the river's water quality. *Id.*, at 621–629.

The importance and the novelty of the Court of Appeals' decision persuaded us to grant certiorari. 499 U.S. 946, 111 S.Ct. 1412, 113 L.Ed.2d 465 (1991). We now reverse.

II

Interstate waters have been a font of controversy since the founding of the Nation. *E.g.*, *Gibbons v. Ogden*, 9 Wheat. 1, 6 L.Ed. 23 (1824). This Court has frequently resolved disputes between States that are separated by a common river, see, *e.g.*, *Ohio v. Kentucky*, 444 U.S. 335, 100 S.Ct. 588, 62 L.Ed.2d 530 (1980), that border the same body of water, see, *e.g.*, ****1053** *New York v. New Jersey*, 256 U.S. 296, 41 S.Ct. 492, 65 L.Ed. 937 (1921), or that are fed by the same river basin, see, *e.g.*, *New Jersey v. New York*, 283 U.S. 336, 51 S.Ct. 478, 75 L.Ed. 1104 (1931).

[1] Among these cases are controversies between a State that introduces pollutants to a waterway and a downstream State that objects. See, *e.g.*, *Missouri v. Illinois*, 200 U.S. 496, 26 S.Ct. 268, 50 L.Ed. 572 (1906). In such cases, this Court has applied principles of common law tempered by a respect for the sovereignty of the States. Compare *id.*, at 521, 26 S.Ct., at 270, with *Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 237, 27 S.Ct. 618, 619, 51 L.Ed. 1038 (1907). In forging what “may ***99** not improperly be called interstate common law,” *Illinois v. Milwaukee*, 406 U.S. 91, 105–106, 92 S.Ct. 1385, 1393–1394, 31 L.Ed.2d 712 (1972) (*Milwaukee I*), however, we remained aware “that new federal laws and new federal regulations may in time pre-empt the field of federal common law of nuisance.” *Id.*, at 107, 92 S.Ct. at 1395.

In *Milwaukee v. Illinois*, 451 U.S. 304, 101 S.Ct. 1784, 68 L.Ed.2d 114 (1981) (*Milwaukee II*), we held that the Federal Water Pollution Control Act Amendments of 1972 did just that. In addressing Illinois' claim that Milwaukee's discharges into Lake Michigan constituted a nuisance, we held that the comprehensive regulatory regime created by the 1972 amendments pre-empted Illinois' federal common law remedy. We observed that Congress had addressed many of the problems we had identified in *Milwaukee I* by providing a downstream State with an opportunity for a hearing before the source State's permitting agency, by requiring the latter to explain its failure to accept any recommendations offered by the downstream State, and by authorizing the EPA, in its discretion, to veto a source State's issuance of any permit if the waters of another State may be affected. *Milwaukee II*, 451 U.S., at 325–326, 101 S.Ct., at 1796–1797.

In *Milwaukee II*, the Court did not address whether the 1972 amendments had supplanted *state* common law remedies as well as the federal common law remedy. See *id.*, at 310, n. 4. On remand, Illinois argued that § 510 of the Clean Water Act, 33 U.S.C. § 1370, expressly preserved the State's right to adopt and enforce rules that are more stringent than federal standards.⁵ The Court of Appeals accepted Illinois' reading of § 510, but held that that section did “no more than *100 to save the right and jurisdiction of a state to regulate activity occurring within the confines of its boundary waters.” *Illinois v. Milwaukee*, 731 F.2d 403, 413 (CA7 1984), cert. denied, 469 U.S. 1196, 105 S.Ct. 979, 83 L.Ed.2d 981 (1985).

[2] This Court subsequently endorsed that analysis in *International Paper Co. v. Ouellette*, 479 U.S. 481, 107 S.Ct. 805, 93 L.Ed.2d 883 (1987), in which Vermont property owners claimed that the pollution discharged into Lake Champlain by a paper company located in New York constituted a nuisance under Vermont law. The Court held the Clean Water Act taken “as a whole, its purposes and its history” pre-empted an action based on the law of the affected State and that the only state law applicable to an interstate discharge is “the law of the State in which the point source is located.” *Id.*, at 493, 487, 107 S.Ct. at 812, 809. Moreover, in reviewing § 402(b) of the Act, the Court pointed out that when a new permit is being issued by the source State's permit-granting agency, the downstream State

****1054** “does not have the authority to block the issuance of the permit if it is dissatisfied with the proposed standards. An affected State's only recourse is to apply to the EPA Administrator, who then has the discretion to disapprove the permit if he concludes that the discharges will have an undue impact on interstate waters. § 1342(d)(2).... Thus the Act makes it clear that affected States occupy a subordinate position to source States in the federal regulatory program.” *Id.*, at 490–491, 107 S.Ct., at 811.⁶

***101** Unlike the foregoing cases, this litigation involves not a state-issued permit, but a federally issued permit. To explain the significance of this distinction, we comment further on the statutory scheme before addressing the specific issues raised by the parties.

III

The Clean Water Act anticipates a partnership between the States and the Federal Government, animated by a shared objective: “to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.” 33 U.S.C. § 1251(a). Toward this end, the Act provides for two sets of water quality measures. “Effluent limitations” are promulgated by the EPA and restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources. See §§ 1311, 1314. “[W]ater quality standards” are, in general, promulgated by the States and establish the desired condition of a waterway. See § 1313. These standards supplement effluent limitations “so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.” *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 205, n. 12, 96 S.Ct. 2022, 2025, n. 12, 48 L.Ed.2d 578 (1976).

The EPA provides States with substantial guidance in the drafting of water quality standards. See generally 40 CFR pt. 131 (1991) (setting forth model water quality standards). Moreover, § 303 of the Act requires, *inter alia*, that state authorities periodically review water quality standards and secure the EPA's approval of any revisions in the standards. If the EPA recommends changes to the standards and the State fails to comply with that recommendation, the Act authorizes the EPA

to promulgate water quality standards for the State. 33 U.S.C. § 1313(c).

The primary means for enforcing these limitations and standards is the NPDES, enacted in 1972 as a critical part of Congress' "complete rewriting" of federal water pollution law. *Milwaukee II*, 451 U.S., at 317, 101 S.Ct., at 1793. Section 301(a) of the Act, 33 U.S.C. § 1311(a), generally prohibits the discharge of any effluent into a navigable body of water unless the point source has obtained an NPDES permit. Section 402 establishes the NPDES permitting regime, and describes two types of permitting systems: state permit programs that must satisfy federal requirements and be approved by the EPA, and a federal program administered by the EPA.

Section 402(b) authorizes each State to establish "its own permit program for discharges into navigable waters within its jurisdiction." 33 U.S.C. § 1342(b). Among the requirements the state program must satisfy **1055 are the procedural protections for downstream States discussed in *Ouellette* and *Milwaukee II*. See §§ 1342(b) (3), (5).⁷ Although these provisions do not authorize the downstream State to veto the issuance of a permit for a new point source in another State, the Administrator retains authority to block the issuance of any state-issued permit that is outside the guidelines and requirements of the Act. § 1342(d)(2).⁸

[3] *103 In the absence of an approved state program, the EPA may issue an NPDES permit under § 402(a) of the Act. (In these cases, for example, because Arkansas had not been authorized to issue NPDES permits when the Fayetteville plant was completed, the permit was issued by the EPA itself.) The EPA's permit program is subject to the "same terms, conditions, and requirements" as a state permit program. 33 U.S.C. § 1342(a)(3). Notwithstanding this general symmetry, the EPA has construed the Act as requiring that EPA-issued NPDES permits also comply with § 401(a). That section, which predates § 402 and the NPDES, applies to a broad category of federal licenses, and sets forth requirements for "[a]ny applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." 33 U.S.C. § 1341(a). Section 401(a) (2) appears to prohibit the issuance of any federal license or permit over the objection of an affected State

unless compliance with the affected State's water quality requirements can be ensured.⁹

**1056 *104 IV

[4] The parties have argued three analytically distinct questions concerning the interpretation of the Clean Water Act. First, does the Act require the EPA, in crafting and issuing a permit to a point source in one State, to apply the water quality standards of downstream States? Second, even if the Act does not *require* as much, does the Agency have the statutory authority to mandate such compliance? Third, does the Act provide, as the Court of Appeals held, that once a body of water fails to meet water quality standards no discharge that yields effluent that reach the degraded waters will be permitted?

In these cases, it is neither necessary nor prudent for us to resolve the first of these questions. In issuing the Fayetteville permit, the EPA assumed it was obligated by both the Act and its own regulations to ensure that the Fayetteville discharge would not violate Oklahoma's standards. See App. to Pet. for Cert. in No. 90–1262, pp. 116a–117a, and n. 14. As we discuss below, this assumption was permissible and reasonable and therefore there is no need for us to address whether the Act requires as much. Moreover, much of the analysis and argument in the briefs of the parties relies on statutory provisions that govern not only federal permits issued pursuant to §§ 401(a) and 402(a), but also state permits issued under § 402(b). It seems unwise to evaluate those arguments in a case such as these, which only involve a federal permit.

[5] *105 Our decision not to determine at this time the scope of the Agency's statutory *obligations* does not affect our resolution of the second question, which concerns the Agency's statutory *authority*. Even if the Clean Water Act itself does not require the Fayetteville discharge to comply with Oklahoma's water quality standards, the statute clearly does not limit the EPA's authority to mandate such compliance.

[6] Since 1973, EPA regulations have provided that an NPDES permit shall not be issued "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States."¹⁰ 40 CFR § 122.4(d) (1991); see also 38 Fed.Reg. 13533 (1973); 40 CFR § 122.44(d) (1991). Those

regulations—relied upon by the EPA in the issuance of the Fayetteville permit—constitute a reasonable exercise of the Agency's statutory authority.

Congress has vested in the Administrator broad discretion to establish conditions for NPDES permits. Section 402(a)(2) provides that for EPA-issued permits “[t]he Administrator shall prescribe conditions ... to assure compliance with the requirements of [§ 402(a)(1)] and such other requirements as he deems appropriate.” 33 U.S.C. § 1342(a)(2) (emphasis added). Similarly, Congress preserved for the Administrator broad authority to oversee state permit programs:

“No permit shall issue ... if the Administrator ... objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter.” § 1342(d)(2).

The regulations relied on by the EPA were a perfectly reasonable exercise of the Agency's statutory discretion. The application of state water quality standards in the interstate context is wholly consistent with the Act's broad purpose “to restore and maintain the chemical, physical, and *106 biological integrity of the Nation's waters.” 33 U.S.C. § 1251(a). Moreover, as noted above, § 301(b)(1)(C) expressly identifies the achievement of state water quality standards as one of the Act's central objectives. The Agency's regulations conditioning NPDES permits are a well-tailored means of achieving this goal.

[7] Notwithstanding this apparent reasonableness, Arkansas argues that our description **1057 in *Ouellette* of the role of affected States in the permit process and our characterization of the affected States' position as “subordinate,” see 479 U.S., at 490–491, 107 S.Ct. at 810–811, indicates that the EPA's application of the Oklahoma standards was error. We disagree. Our statement in *Ouellette* concerned only an affected State's input into the permit process; that input is clearly limited by the plain language of § 402(b). Limits on an affected State's direct participation in permitting decisions, however, do not in any way constrain the EPA's authority to require a point source to comply with downstream water quality standards.

Arkansas also argues that regulations requiring compliance with downstream standards are at odds with the legislative history of the Act and with the statutory scheme established by the Act. Although we agree with

Arkansas that the Act's legislative history indicates that Congress intended to grant the Administrator discretion in his oversight of the issuance of NPDES permits,¹¹ we find nothing in that history to indicate that Congress intended to preclude the EPA from establishing a general requirement that such permits be conditioned to ensure compliance with downstream water quality standards.

Similarly, we agree with Arkansas that in the Clean Water Act Congress struck a careful balance among competing policies and interests, but do not find the EPA regulations concerning *107 the application of downstream water quality standards at all incompatible with that balance. Congress, in crafting the Act, protected certain sovereign interests of the States; for example, § 510 allows States to adopt more demanding pollution-control standards than those established under the Act. Arkansas emphasizes that § 510 preserves such state authority only as it is applied to the waters of the regulating State. Even assuming Arkansas' construction of § 510 is correct, cf. *id.*, at 493, 107 S.Ct., at 812, that section only concerns state authority and does not constrain the EPA's authority to promulgate reasonable regulations requiring point sources in one State to comply with water quality standards in downstream States.

[8] For these reasons, we find the EPA's requirement that the Fayetteville discharge comply with Oklahoma's water quality standards to be a reasonable exercise of the Agency's substantial statutory discretion. Cf. *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842–845, 104 S.Ct. 2778, 2781–2783, 81 L.Ed.2d 694 (1984).

V

[9] The Court of Appeals construed the Clean Water Act to prohibit any discharge of effluent that would reach waters already in violation of existing water quality standards.¹² We find nothing in the Act to support this reading.

**1058 *108 The interpretation of the statute adopted by the court had not been advanced by any party during the Agency or court proceedings. Moreover, the Court of Appeals candidly acknowledged that its theory “has apparently never before been addressed by a federal court.” 908 F.2d, at 620, n. 39. The only statutory

provision the court cited to support its legal analysis was § 402(h), see *id.*, at 633, which merely authorizes the EPA (or a state permit program) to prohibit a publicly owned treatment plant that is violating a condition of its NPDES permit from accepting any additional pollutants for treatment until the ongoing violation has been corrected. See 33 U.S.C. § 1342(h).

Although the Act contains several provisions directing compliance with state water quality standards, see, e.g., § 1311(b)(1)(C), the parties have pointed to nothing that mandates a complete ban on discharges into a waterway that is in violation of those standards. The statute does, however, contain provisions designed to remedy existing water quality violations and to allocate the burden of reducing undesirable discharges between existing sources and new sources. See, e.g., § 1313(d). Thus, rather than establishing the categorical ban announced by the Court of Appeals—which might frustrate the construction of new plants that would improve existing conditions—the Clean Water Act vests in the EPA and the States broad authority to develop long-range, area-wide programs to alleviate and eliminate existing pollution. See, e.g., § 1288(b)(2).

To the extent that the Court of Appeals relied on its interpretation of the Act to reverse the EPA's permitting decision, that reliance was misplaced.

*109 VI

[10] The Court of Appeals also concluded that the EPA's issuance of the Fayetteville permit was arbitrary and capricious because the Agency misinterpreted Oklahoma's water quality standards. The primary difference¹³ between the court's and the Agency's interpretation of the standards derives from the court's construction of the Act. Contrary to the EPA's interpretation of the Oklahoma standards, the Court of Appeals read those standards as containing the same categorical ban on new discharges that the court had found in the Clean Water Act itself. Although we do not believe the text of the Oklahoma standards supports the court's reading (indeed, we note that Oklahoma itself had not advanced that interpretation in its briefs in the Court of Appeals), we reject it for a more fundamental reason—namely, that the Court of Appeals exceeded the legitimate scope of judicial review of an agency adjudication. To emphasize the importance

of this point, we shall first briefly assess the soundness of the EPA's interpretation and application of the Oklahoma *110 standards and then comment more specifically on the Court of Appeals' approach.

As discussed above, an EPA regulation requires an NPDES permit to comply “with the applicable water quality requirements of **1059 all affected States.” 40 CFR § 122.4(d) (1991). This regulation effectively incorporates into federal law those state-law standards the Agency reasonably determines to be “applicable.” In such a situation, then, state water quality standards—promulgated by the States with substantial guidance from the EPA¹⁴ and approved by the Agency—are part of the federal law of water pollution control.

[11] Two features of the body of law governing water pollution support this conclusion. First, as discussed more thoroughly above, we have long recognized that interstate water pollution is controlled by *federal* law. See *supra*, at 1052–1054. Recognizing that the system of federally approved state standards as applied in the interstate context constitutes federal law is wholly consistent with this principle. Second, treating state standards in interstate controversies as federal law accords with the Act's purpose of authorizing the EPA to create and manage a uniform system of interstate water pollution regulation.

Because we recognize that, at least insofar as they affect the issuance of a permit in another State, the Oklahoma standards have a federal character, the EPA's reasonable, consistently held interpretation of those standards is entitled to substantial deference. Cf. *INS v. National Center for Immigrants' Rights*, 502 U.S. 183, 189–190, 112 S.Ct. 551, 556, 116 L.Ed.2d 546 (1991); *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). In these cases, the Chief Judicial Officer ruled that the Oklahoma standards—which require that there be “no degradation” of the upper Illinois River—would *111 only be violated if the discharge effected an “actually detectable or measurable” change in water quality. App. to Pet. for Cert. in No. 90–1262, p. 117a.

This interpretation of the Oklahoma standards is certainly reasonable and consistent with the purposes and principles of the Clean Water Act. As the Chief Judicial Officer noted, “unless there is some method for measuring compliance, there is no way to ensure compliance.” *Id.*,

at 118a, n. 16 (internal quotation marks omitted; citation omitted). Moreover, this interpretation of the Oklahoma standards makes eminent sense in the interstate context: If every discharge that had some theoretical impact on a downstream State were interpreted as “degrading” the downstream waters, downstream States might wield an effective veto over upstream discharges.

[12] The EPA's application of those standards in these cases was also sound. On remand, the ALJ scrutinized the record and made explicit factual findings regarding four primary measures of water quality under the Oklahoma standards: eutrophication,¹⁵ esthetics,¹⁶ dissolved oxygen,¹⁷ and ****1060** metals. ***112** ¹⁸ In each case, the ALJ found that the Fayetteville discharge would not lead to a detectable change in water quality. He therefore concluded that the Fayetteville discharge would not violate the Oklahoma water quality standards. Because we agree with the Agency's Chief Judicial Officer that these findings are supported by substantial evidence, we conclude that the Court of Appeals should have affirmed both the EPA's construction of the regulations and the issuance of the Fayetteville permit.

In its review of the EPA's interpretation and application of the Oklahoma standards, the Court of Appeals committed three mutually compounding errors.

[13] First, the court failed to give due regard to the EPA's interpretation of its own regulations, as those regulations incorporate the Oklahoma standards. Instead the court voiced its own interpretation of the governing law and concluded that “where a proposed source would discharge effluents that would contribute to conditions currently constituting a violation of applicable water quality standards, such [a] proposed source may not be permitted.” 908 F.2d, at 620. As we have already pointed out, that reading of the law is not supported by the statute or by any EPA regulation. The Court of Appeals sat in review of an agency action and should have afforded the EPA's interpretation of the governing law an appropriate level of deference. See generally *Chevron, supra*, 467 U.S., at 842–844, 104 S.Ct., at 2781–2782.

[14] Second, the court disregarded well-established standards for reviewing the factual findings of agencies and instead made its own factual findings. The troubling nature of the court's analysis appears on the face of the opinion itself: At least four times, the court

concluded that “there was substantial evidence before the ALJ to support” particular findings which the court thought appropriate, but which were ***113** contrary to those actually made by the ALJ. 908 F.2d, at 620, 625, 627, 629. Although we have long recognized the “substantial evidence” standard in administrative law, the court below turned that analysis on its head. A court reviewing an agency's adjudicative action should accept the *agency's* factual findings if those findings are supported by substantial evidence on the record as a whole. See generally *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 71 S.Ct. 456, 95 L.Ed. 456 (1951). The court should not supplant the agency's findings merely by identifying alternative findings that could be supported by substantial evidence.

Third, the court incorrectly concluded that the EPA's decision was arbitrary and capricious. This error is derivative of the court's first two errors. Having substituted its reading of the governing law for the Agency's, and having made its own factual findings, the Court of Appeals concluded that the EPA erred in not considering an important and relevant fact—namely, that the upper Illinois River was (by the court's assessment) already degraded.

As we have often recognized, an agency ruling is “arbitrary and capricious if the agency has ... entirely failed to consider an important aspect of the problem.” *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 2867, 77 L.Ed.2d 443 (1983). However, in these cases, the degraded status of the river is only an “important aspect” because of the Court of Appeals' novel and erroneous interpretation of the controlling law. Under the EPA's interpretation of that law, what matters is not the river's current status, but rather whether the proposed discharge will have a “detectable effect” on that status. If the Court of Appeals had been properly respectful of the Agency's permissible reading of the Act and ****1061** the Oklahoma standards, the court would not have adjudged the Agency's decision arbitrary and capricious for this reason.

[15] [16] In sum, the Court of Appeals made a policy choice that it was not authorized to make. Arguably, as that court suggested, ***114** it might be wise to prohibit any discharge into the Illinois River, even if that discharge would have no adverse impact on water quality. But

it was surely not arbitrary for the EPA to conclude—given the benefits to the river from the increased flow of relatively clean water¹⁹ and the benefits achieved in Arkansas by allowing the new plant to operate as designed—that allowing the discharge would be even wiser. It is not our role, or that of the Court of Appeals, to decide which policy choice is the better one, for it is clear that Congress has entrusted such decisions to the Environmental Protection Agency.

Accordingly, the judgment of the Court of Appeals is

Reversed.

All Citations

503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239, 34 ERC 1193, 60 USLW 4176, 22 Env'tl. L. Rep. 20,552

Footnotes

- * The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Lumber Co.*, 200 U.S. 321, 337, 26 S.Ct. 282, 287, 50 L.Ed. 499.
- 1 The permit also authorized the plant to discharge the remainder of its effluent into the White River, a river that does not flow into Oklahoma; this aspect of the permit is not at issue in this litigation.
- 2 Section 5 of the Oklahoma water quality standards provides:
 “All streams and bodies of water designated as (a) are protected by prohibition of any new point source discharge of wastes or increased load from an existing point source except under conditions described in Section 3.
 “All streams designated by the State as ‘scenic river areas,’ and such tributaries of those streams as may be appropriate will be so designated. Best management practices for control of nonpoint source discharge should be initiated when feasible.” App. 46–47.
 Oklahoma has designated the portion of the Illinois River immediately downstream from the state line as a “scenic river.” *Okla.Stat., Tit. 82, § 1452(b)(1)* (Supp.1989); see also App. 54.
 Section 3 of the Oklahoma water quality standards provides, in relevant part:
 “The intent of the Anti-degradation Policy is to protect all waters of the State from quality degradation. Existing instream water uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing instream water uses shall be allowed. Oklahoma's waters constitute a valuable State resource and shall be protected, maintained and improved for the benefit of all the citizens.

 “No degradation shall be allowed in high quality waters which constitute an outstanding resource or in waters of exceptional recreational or ecological significance. These include water bodies located in national and State parks, Wildlife Refuges, and those designated ‘Scenic Rivers’ in Appendix A.” App. 27–28.
- 3 Section 301(b)(1)(C) provides, in relevant part, that
 “there shall be achieved—

 “(C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet *water quality standards ... established pursuant to any State law or regulations ...* or required to implement any applicable water quality standard established pursuant to this chapter.” *33 U.S.C. § 1311(b)(1)(C)* (emphasis added).
- 4 The Arkansas petition was filed in the Court of Appeals for the Eighth Circuit and transferred to the Tenth Circuit where it was consolidated with the petition filed by the respondents.
- 5 Section 510 provides in relevant part:
 “Except as expressly provided in this [Act], nothing in this [Act] shall (1) preclude or deny the right of any State or political subdivision thereof or interstate agency to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution [with exceptions]; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States *with respect to the waters (including boundary waters) of such States.*” *33 U.S.C. § 1370* (emphasis added).
- 6 This description of the downstream State's role in the issuance of a new permit by a source State was apparently consistent with the EPA's interpretation of the Act at the time. The Government's *amicus curiae* brief in *Ouellette* stated that “the affected neighboring state [has] only an advisory role in the formulation of applicable effluent standards or

limitations. The affected state may try to persuade the federal government or the source state to increase effluent requirements, but *ultimately possesses no statutory authority to compel that result, even when its waters are adversely affected by out-of-state pollution*. See [33 U.S.C. § 1341\(a\)\(2\), 1342\(b\)\(3\) and \(5\)](#)....” Brief for United States as *Amicus Curiae*, O.T. 1986, No. 85–1233, p. 19 (emphasis added; footnote omitted).

7 Section 402(b) requires state permit programs

“(3) [t]o insure that ... any other State the waters of which may be affected ... receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application;

.....

“(5) [t]o insure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing.” [33 U.S.C. § 1342\(b\)](#).

Although § 402(b) focuses on state-issued permits, § 402(a)(3) requires that, in issuing an NPDES permit, the Administrator follow the same procedures required of state permit programs. See [§ 1342\(a\)\(3\)](#); see also [33 U.S.C. § 1341\(a\)\(2\)](#).

8 Section 402(d)(2) provides:

“(2) No permit shall issue (A) if the Administrator within ninety days of the date of his notification under subsection (b)(5) of this section objects in writing to the issuance of such permit, or (B) if the Administrator within ninety days of the date of transmittal of the proposed permit by the State objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter. Whenever the Administrator objects to the issuance of a permit under this paragraph such written objection shall contain a statement of the reasons for such objection and the effluent limitations and conditions which such permit would include if it were issued by the Administrator.” [33 U.S.C. § 1342\(d\)\(2\)](#).

9 Section 401(a)(2) provides, in relevant part:

“Whenever such a discharge may affect, as determined by the Administrator, the quality of the waters of any other State, the Administrator ... shall so notify such other State, the licensing or permitting agency, and the applicant. If, within sixty days after receipt of such notification, such other State determines that such discharge will affect the quality of its waters so as to violate any water quality requirements in such State, and within such sixty-day period notifies the Administrator and the licensing or permitting agency in writing of its objection to the issuance of such license or permit and requests a public hearing on such objection, the licensing or permitting agency shall hold such a hearing. The Administrator shall at such hearing submit his evaluation and recommendations with respect to any such objection to the licensing or permitting agency. Such agency, based upon the recommendations of such State, the Administrator, and upon any additional evidence, if any, presented to the agency at the hearing, shall condition such license or permit in such manner as may be necessary to insure compliance with applicable water quality requirements. If the imposition of conditions cannot insure such compliance such agency shall not issue such license or permit.” [33 U.S.C. § 1341\(a\)\(2\)](#).

10 This restriction applies whether the permit is issued by the EPA or by an approved state program. See [40 CFR § 123.25 \(1991\)](#).

11 See, e.g., 1 Legislative History of Water Pollution Control Act Amendments of 1972 (Committee Print compiled for the Senate Committee on Public Works by the Library of Congress), Ser. No. 93–1, pp. 322, 388–389, 814 (1973); see also [33 U.S.C. § 1342\(d\)\(3\)](#).

12 “[W]e hold that the Clean Water Act prohibits granting an NPDES permit under the circumstances of this case (i.e., where applicable water quality standards have already been violated) and reverse EPA’s decision to permit Fayetteville to discharge any part of its effluent to the Illinois River Basin.” [908 F.2d 595, 616 \(CA10 1990\)](#).

“Congress cannot reasonably be presumed to have intended to exclude from the CWA’s ‘all-encompassing program,’ [451 U.S., at 318 \[101 S.Ct., at 1793\]](#) a permitting decision arising in circumstances such as those of this case. It is even more unfathomable that Congress fashioned a ‘comprehensive ... policy for the *elimination* of water pollution,’ *id.*, which sanctions continued pollution once minimum water quality standards have been transgressed. More likely, Congress simply never contemplated that EPA or a state would consider it permissible to authorize further pollution under such circumstances. We will not ascribe to the Act either the gaping loophole or the irrational purpose necessary to uphold EPA’s action in this case.” *Id.*, at [632](#) (footnotes omitted).

13 The court identified three errors in the EPA’s reading of the Oklahoma standards. First, the court correctly observed that the ALJ and the Chief Judicial Officer misinterpreted § 4.10(c) of the standards as governing only the discharge of phosphorus into lakes, rather than the discharge of phosphorus into lakes and into all “perennial and intermittent streams.”

Id., at 617 (emphasis omitted). This error was harmless because the ALJ found that the discharge into Lake Francis would comply with § 4.10(c) and it is undisputed that that discharge produced a greater threat to the slow-moving water of the lake than to the rapid flow in the river.

The second flaw identified by the court was the ALJ's mistaken reliance on the 1985, rather than the 1982 version, of the Oklahoma standards. We agree with the Chief Judicial Officer, who also noted this error, that the portions of the two versions relevant to this case "do not differ materially." App. to Pet. for Cert. in No. 90–1262, p. 150a. Therefore, this error was also harmless.

Because these two errors were harmless, we have focused in the text on the major difference between the court's and the EPA's readings of the Oklahoma standards: the "no degradation" provision.

- 14 See *supra*, at 1054. Oklahoma's water quality standards closely track the EPA's model standards in effect at that time. Compare § 3 of the Oklahoma standards with 40 CFR § 35.1550(e)(1) (1981).
- 15 Eutrophication is the "normally slow aging process by which a lake evolves into a bog or marsh.... During eutrophication the lake becomes so rich in nutritive compounds (especially nitrogen and phosphorus) that algae and other microscopic plant life become superabundant, thereby 'choking' the lake...." App. 57–58. With regard to eutrophication, the ALJ found that the Fayetteville plant would discharge 30 pounds of phosphorus per day, only about 6 pounds of which would reach the Arkansas/Oklahoma border, and that such a small amount would not result in an increase in eutrophication. App. to Pet. for Cert. in No. 90–1262, p. 129a.
- 16 With regard to esthetics, the ALJ concluded that the only discharged compound that would affect esthetics was phosphorus and that, again, the amount of that substance crossing the border would not affect the esthetic quality of Oklahoma's waters. *Id.*, at 135a–136a.
- 17 With regard to dissolved oxygen, the ALJ found that in the 39 miles between discharge and the border the effluent would experience "complete oxygen recovery" and therefore would not affect the dissolved oxygen levels in the river. *Id.*, at 140a.
- 18 With regard to metals, the ALJ concluded that the concentrations of metals would be so low as not to violate the Oklahoma standards. *Id.*, at 143a.
- 19 Justice Holmes recognized this potential benefit years ago:
"There is no pretence that there is a nuisance of the simple kind that was known to the older common law. There is nothing which can be detected by the unassisted senses—no visible increase of filth, no new smell. On the contrary, it is proved that the great volume of pure water from Lake Michigan which is mixed with the sewage at the start has improved the Illinois River in these respects to a noticeable extent. Formerly it was sluggish and ill smelling. Now it is a comparatively clear stream to which edible fish have returned. Its water is drunk by the fisherman, it is said, without evil results." *Missouri v. Illinois*, 200 U.S. 496, 522, 26 S.Ct. 268, 270, 50 L.Ed. 572 (1906).

West's Annotated California Codes
Constitution of the State of California 1879 (Refs & Annos)
Article Xiii.b. Government Spending Limitation (Refs & Annos)

West's Ann.Cal.Const. Art. 13B, § 6

§ 6. New programs or services mandated by Legislature or state agencies; subvention; appropriation of funds or suspension of operation

Effective: June 4, 2014

[Currentness](#)

SEC. 6. (a) Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the State shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service, except that the Legislature may, but need not, provide a subvention of funds for the following mandates:

- (1) Legislative mandates requested by the local agency affected.
- (2) Legislation defining a new crime or changing an existing definition of a crime.
- (3) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.
- (4) Legislative mandates contained in statutes within the scope of paragraph (7) of [subdivision \(b\) of Section 3 of Article I](#).

(b)(1) Except as provided in paragraph (2), for the 2005-06 fiscal year and every subsequent fiscal year, for a mandate for which the costs of a local government claimant have been determined in a preceding fiscal year to be payable by the State pursuant to law, the Legislature shall either appropriate, in the annual Budget Act, the full payable amount that has not been previously paid, or suspend the operation of the mandate for the fiscal year for which the annual Budget Act is applicable in a manner prescribed by law.

(2) Payable claims for costs incurred prior to the 2004-05 fiscal year that have not been paid prior to the 2005-06 fiscal year may be paid over a term of years, as prescribed by law.

(3) Ad valorem property tax revenues shall not be used to reimburse a local government for the costs of a new program or higher level of service.

(4) This subdivision applies to a mandate only as it affects a city, county, city and county, or special district.

(5) This subdivision shall not apply to a requirement to provide or recognize any procedural or substantive protection, right, benefit, or employment status of any local government employee or retiree, or of any local government employee organization, that arises from, affects, or directly relates to future, current, or past local government employment and that constitutes a mandate subject to this section.

(c) A mandated new program or higher level of service includes a transfer by the Legislature from the State to cities, counties, cities and counties, or special districts of complete or partial financial responsibility for a required program for which the State previously had complete or partial financial responsibility.

Credits

(Adopted Nov. 6, 1979. Amended by Stats.2004, Res. c. 133 (S.C.A.4) ([Prop. 1A, approved Nov. 2, 2004](#), eff. Nov. 3, 2004); Stats.2013, Res. c. 123 (S.C.A.3), § 2 ([Prop. 42, approved June 3, 2014](#), eff. June 4, 2014).)

[Notes of Decisions \(202\)](#)

West's Ann. Cal. Const. Art. 13B, § 6, CA CONST Art. 13B, § 6
Current with urgency legislation through Ch. 14 of 2017 Reg.Sess



KeyCite Yellow Flag - Negative Treatment

Distinguished by [City of Arcadia v. State Water Resources Control Bd.](#), Cal.App. 4 Dist., December 14, 2010

35 Cal.4th 613

Supreme Court of California

CITY OF BURBANK, Plaintiff and Appellant,

v.

STATE WATER RESOURCES CONTROL

BOARD et al., Defendants and Appellants.

City of Los Angeles, Plaintiff and Respondent,

v.

State Water Resources Control Board

et al., Defendants and Appellants.

Nos. S119248, B151175, B152562.

April 4, 2005.

Rehearing Denied June 29, 2005.*

Synopsis

Background: Cities filed petitions for writs of mandate challenging pollutant limitations in wastewater discharge permits issued by regional water quality control boards. The Superior Court, Los Angeles County, Nos. BS060957 and BS060960, [Dzintra I. Janavs, J.](#), set aside permits. Regional board and state water resources control board appealed. The Court of Appeal consolidated the cases and reversed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, [Kennard, J.](#), held that:

[1] regional board may not consider economic factors as justification for imposing pollutant restrictions in wastewater discharge permit which are less stringent than applicable federal standards, and

[2] when imposing more stringent pollutant restrictions that those required by federal law, regional board may take economic factors into account.

Judgment of Court of Appeal affirmed, and matter remanded.

[Brown, J.](#), filed concurring opinion.

Opinion, [4 Cal.Rptr.3d 27](#), superseded.

West Headnotes (5)

[1] Environmental Law

🔑 Purpose

Clean Water Act is a comprehensive water quality statute designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., as amended, [33 U.S.C.A. § 1251 et seq.](#)

[11 Cases that cite this headnote](#)

[2] Environmental Law

🔑 Conditions and limitations

States

🔑 Environment;nuclear projects

Regional water quality control board may not consider economic factors as justification for imposing pollutant restrictions in wastewater discharge permit which are less stringent than applicable federal standards, despite statute directing board to take such factors into consideration, because the federal constitutional supremacy clause requires state law to yield to federal law. [U.S.C.A. Const. Art. 6, cl. 2](#); Federal Water Pollution Control Act Amendments of 1972, §§ 101 et seq., 301(a), (b)(1)(B, C), 402(a)(1, 3), as amended, [33 U.S.C.A. §§ 1251 et seq.](#), 1311(a), (b)(1)(B, C), 1342(a)(1, 3); [West's Ann.Cal.Water Code §§ 13000 et seq.](#), 13241(d), 13263, 13377.

See 4 Witkin, Summary of Cal. Law (9th ed. 1987) Real Property, §§ 68, 69; 8 Miller & Starr, Cal. Real Estate (3d ed. 2001) § 23:54; Cal. Jur. 3d, Pollution and Conservation Laws, § 126.

[14 Cases that cite this headnote](#)

[3] Statutes**🔑 Purpose and intent**

When construing any statute, the court's task is to determine the Legislature's intent when it enacted the statute so as to adopt the construction that best effectuates the purpose of the law.

[13 Cases that cite this headnote](#)

[4] States**🔑 Conflicting or conforming laws or regulations**

Under the federal Constitution's supremacy clause, a state law that conflicts with federal law is without effect. [U.S.C.A. Const. Art. 6, cl. 2.](#)

[Cases that cite this headnote](#)

[5] Environmental Law**🔑 Conditions and limitations**

When imposing more stringent pollutant restrictions in a wastewater discharge permit than those required by federal law, a regional water quality control board may take into account the economic effects of doing so. Federal Water Pollution Control Act Amendments of 1972, §§ 101 et seq., 101(b), 510, as amended, [33 U.S.C.A. §§ 1251 et seq., 1251\(b\), 1370; West's Ann.Cal.Water Code §§ 13000 et seq., 13241\(d\), 13263, 13377.](#)

[17 Cases that cite this headnote](#)

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Opinion

[KENNARD, J.](#)

618** *864** Federal law establishes national water quality standards but allows the states to enforce their own water quality laws so long as they comply with federal standards. Operating within this federal-state framework, California's nine Regional Water Quality Control Boards establish water quality policy. They also issue permits for the discharge of treated wastewater; these permits specify the maximum allowable concentration of chemical pollutants in the discharged wastewater.

The question here is this: When a regional board issues a permit to a wastewater treatment facility, must the board take into account the facility's costs of complying with the board's restrictions on pollutants in the wastewater to be discharged? The trial court ruled that California law required a regional board to weigh the economic burden on the facility against the expected environmental benefits of reducing pollutants in the wastewater discharge. The Court of Appeal disagreed. On petitions by the municipal operators of three wastewater treatment facilities, we granted review.

We reach the following conclusions: Because both California law and federal law require regional boards to comply with federal clean water standards, and because the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic factors to justify imposing pollutant restrictions that are *less stringent* than the applicable federal standards require. When, however, a regional board is considering whether to make the pollutant restrictions in a wastewater discharge permit

more stringent than federal law requires, California law allows the board to take into account economic ****865** factors, including the wastewater discharger's cost of compliance. We remand this case for further proceedings to determine whether the pollutant limitations in the permits challenged here meet or exceed federal standards.

***619 I. STATUTORY BACKGROUND**

The quality of our nation's waters is governed by a “complex statutory and regulatory scheme ... that implicates both federal and state administrative responsibilities.” (*PUD No. 1 of Jefferson County v. Washington Department of Ecology* (1994) 511 U.S. 700, 704, 114 S.Ct. 1900, 128 L.Ed.2d 716.) We first discuss California law, then federal law.

A. California Law

In California, the controlling law is the Porter–Cologne Water Quality Control Act (Porter–Cologne Act), which was enacted in 1969. (*Wat.Code*, § 13000 *et seq.*, added by Stats.1969, ch. 482, § 18, p. 1051.)¹ Its goal is “to attain the highest water *****307** quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.” (§ 13000.) The task of accomplishing this belongs to the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards; together the State Board and the regional boards comprise “the principal state agencies with primary responsibility for the coordination and control of water quality.” (§ 13001.) As relevant here, one of those regional boards oversees the Los Angeles region (the Los Angeles Regional Board).²

Whereas the State Board establishes statewide policy for water quality control (§ 13140), the regional boards “formulate and adopt water quality control plans for all areas within [a] region” (§ 13240). The regional boards' water quality plans, called “basin plans,” must address the beneficial uses to be protected as well as water quality objectives, and they must establish a program of implementation. (§ 13050, subd. (j).) Basin plans must be consistent with “state policy for water quality control.” (§ 13240.)

B. Federal Law

[1] In 1972, Congress enacted amendments (Pub.L. No. 92–500 (Oct. 18, 1972) 86 Stat. 816) to the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), which, as amended in 1977, is commonly known as the Clean *620 Water Act. The Clean Water Act is a “comprehensive water quality statute designed ‘to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.’ ” (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, supra*, 511 U.S. at p. 704, 114 S.Ct. 1900, quoting 33 U.S.C. § 1251(a).) The Act's national goal was to eliminate by the year 1985 “the discharge of pollutants into the navigable waters” of the United States. (33 U.S.C. § 1251(a)(1).) To accomplish this goal, the Act established “effluent limitations,” which are restrictions on the “quantities, rates, and concentrations of chemical, physical, biological, and other constituents”; these effluent limitations allow the discharge of pollutants only when the water has been satisfactorily treated to conform with federal water quality standards. (33 U.S.C. §§ 1311, 1362(11).)

Under the federal Clean Water Act, each state is free to enforce its own water quality laws so long as its effluent limitations are not “less stringent” than those set out in the Clean Water Act. (33 U.S.C. § 1370.) This led the California Legislature in 1972 to amend the state's Porter–Cologne Act “to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act.” (§ 13372.)

866 Roughly a dozen years ago, the United States Supreme Court, in *Arkansas v. Oklahoma* (1992) 503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239, described the distinct roles of the state and federal agencies in enforcing water quality: “The Clean Water Act anticipates a partnership between the States and the Federal Government, animated by a shared objective: ‘to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.’ 33 U.S.C. § 1251(a). Toward *308 this end, [the Clean Water Act] provides for two sets of water quality measures. ‘Effluent limitations’ are promulgated by the [Environmental Protection Agency (EPA)] and restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources.³ See §§ 1311, 1314. ‘[W]ater quality standards’ are, in general, promulgated by the States and establish the desired condition of

a waterway. See § 1313. These standards supplement effluent limitations ‘so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.’ *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 205, n. 12, 96 S.Ct. 2022, 2025, n. 12, 48 L.Ed.2d 578 (1976).

*621 “The EPA provides States with substantial guidance in the drafting of water quality standards. See generally 40 CFR pt. 131 (1991) (setting forth model water quality standards). Moreover, [the Clean Water Act] requires, *inter alia*, that state authorities periodically review water quality standards and secure the EPA's approval of any revisions in the standards. If the EPA recommends changes to the standards and the State fails to comply with that recommendation, the Act authorizes the EPA to promulgate water quality standards for the State. 33 U.S.C. § 1313(c).” (*Arkansas v. Oklahoma, supra*, 503 U.S. at p. 101, 112 S.Ct. 1046.)

Part of the federal Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), “[t]he primary means” for enforcing effluent limitations and standards under the Clean Water Act. (*Arkansas v. Oklahoma, supra*, 503 U.S. at p. 101, 112 S.Ct. 1046.) The NPDES sets out the conditions under which the federal EPA or a state with an approved water quality control program can issue permits for the discharge of pollutants in wastewater. (33 U.S.C. § 1342(a) & (b).) In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits required by federal law. (§ 13374.)

With this federal and state statutory framework in mind, we now turn to the facts of this case.

II. FACTUAL BACKGROUND

This case involves three publicly owned treatment plants that discharge wastewater under NPDES permits issued by the Los Angeles Regional Board.

The City of Los Angeles owns and operates the Donald C. Tillman Water Reclamation Plant (Tillman Plant), which serves the San Fernando Valley. The City of Los Angeles also owns and operates the Los Angeles–Glendale Water Reclamation Plant (Los Angeles–Glendale Plant),

which processes wastewater from areas within the City of Los Angeles and the independent cities of Glendale and Burbank. Both the Tillman Plant and the Los Angeles–Glendale Plant discharge wastewater directly into the Los Angeles River, now a concrete-lined flood control channel that runs through the City of Los Angeles, ending at the Pacific Ocean. The State Board and the Los Angeles Regional Board consider the Los Angeles River to be a navigable water of the United States for purposes of the federal Clean Water Act.

The third plant, the Burbank Water Reclamation Plant (Burbank Plant), is owned and operated by the City of Burbank, ***309 serving residents and businesses within that city. The Burbank Plant discharges wastewater into the Burbank Western Wash, which drains into the Los Angeles River.

*622 All three plants, which together process hundreds of millions of gallons of sewage **867 each day, are tertiary treatment facilities; that is, the treated wastewater they release is processed sufficiently to be safe not only for use in watering food crops, parks, and playgrounds, but also for human body contact during recreational water activities such as swimming.

In 1998, the Los Angeles Regional Board issued renewed NPDES permits to the three wastewater treatment facilities under a basin plan it had adopted four years earlier for the Los Angeles River and its estuary. That 1994 basin plan contained general narrative criteria pertaining to the existing and potential future beneficial uses and water quality objectives for the river and estuary.⁴ The narrative criteria included municipal and domestic water supply, swimming and other recreational water uses, and fresh water habitat. The plan further provided: “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.” The 1998 permits sought to reduce these narrative criteria to specific numeric requirements setting daily maximum limitations for more than 30 pollutants present in the treated wastewater, measured in milligrams or micrograms per liter of effluent.⁵

The Cities of Los Angeles and Burbank (Cities) filed appeals with the State Board, contending that achievement of the numeric requirements would be too costly when considered in light of the potential benefit to

water quality, and that the pollutant restrictions in the NPDES permits were unnecessary to meet the narrative criteria described in the basin plan. The State Board summarily denied the Cities' appeals.

Thereafter, the Cities filed petitions for writs of administrative mandate in the superior court. They alleged, among other things, that the Los Angeles Regional Board failed to comply with [sections 13241](#) and [13263](#), part of California's Porter–Cologne Act, because it did not consider the economic burden on the Cities in having to reduce substantially the pollutant content of their discharged wastewater. They also alleged that compliance with the pollutant restrictions set out in the NPDES permits issued by the regional *623 board would greatly increase their costs of treating the wastewater to be discharged into the Los Angeles River. According to the City of Los Angeles, its compliance costs would exceed \$50 million annually, representing more than 40 percent of its entire budget for operating its four wastewater treatment plants and its sewer system; the City of Burbank estimated its added costs at over \$9 million annually, a nearly 100 percent increase above its \$9.7 million annual budget for wastewater treatment.

***310 The State Board and the Los Angeles Regional Board responded that [sections 13241](#) and [13263](#) do not require consideration of costs of compliance when a regional board issues a NPDES permit that restricts the pollutant content of discharged wastewater.

The trial court stayed the contested pollutant restrictions for each of the three wastewater treatment plants. It then ruled that [sections 13241](#) and [13263](#) of California's Porter–Cologne Act required a regional board to consider costs of compliance not only when it adopts a basin or water quality plan but also when, as here, it issues an NPDES permit setting the allowable pollutant content of a treatment plant's discharged wastewater. The court found no evidence that the Los Angeles Regional Board had considered economic factors at either stage. Accordingly, the trial court granted the Cities' petitions for writs of mandate, and it ordered the Los Angeles Regional Board to vacate the contested restrictions on pollutants in the wastewater discharge permits issued to the three municipal plants here and to conduct hearings **868 to consider the Cities' costs of compliance before the board's issuance of new permits. The Los Angeles Regional Board and the

State Board filed appeals in both the Los Angeles and Burbank cases.⁶

The Court of Appeal, after consolidating the cases, reversed the trial court. It concluded that [sections 13241](#) and [13263](#) require a regional board to take into account “economic considerations” when it adopts water quality standards in a basin plan but not when, as here, the regional board sets specific pollutant restrictions in wastewater discharge permits intended to satisfy those standards. We granted the Cities' petition for review.

*624 III. DISCUSSION

A. Relevant State Statutes

The California statute governing the issuance of *wastewater permits* by a regional board is [section 13263](#), which was enacted in 1969 as part of the Porter–Cologne Act. (See 26 Cal.Rptr.3d pp. 306–307, 108 P.3d p. 865, *ante.*) [Section 13263](#) provides in relevant part: “*The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge [of wastewater]. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.*” (§ 13263, *subd. (a)*, italics added.)

[Section 13241](#) states: “Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

***311 “(a) Past, present, and probable future beneficial uses of water.

“(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

“(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

“(d) *Economic considerations.*

“(e) The need for developing housing within the region.

“(f) The need to develop and use recycled water.” (Italics added.)

The Cities here argue that [section 13263](#)'s express reference to [section 13241](#) requires the Los Angeles Regional Board to consider [section 13241](#)'s listed factors, notably “[e]conomic considerations,” before issuing NPDES permits requiring specific pollutant reductions in discharged effluent or treated wastewater.

[2] *625 Thus, at issue is language in [section 13263](#) stating that when a regional board “prescribe[s] requirements as to the nature of any proposed discharge” of treated wastewater it must “take into consideration” certain factors including “the provisions of [Section 13241](#).” According to the Cities, this statutory language requires that a regional board make an independent evaluation of the [section 13241](#) factors, including “economic considerations,” before restricting the pollutant content in an NPDES permit. This was the view expressed in the trial court's ruling. The Court of Appeal rejected that view. It held that a regional board need consider the [section 13241](#) factors only when it adopts a basin or water quality plan, but not when, as in this case, it issues a wastewater discharge **869 permit that sets specific numeric limitations on the various chemical pollutants in the wastewater to be discharged. As explained below, the Court of Appeal was partly correct.

B. Statutory Construction

[3] When construing any statute, our task is to determine the Legislature's intent when it enacted the statute “so that we may adopt the construction that best effectuates the purpose of the law.” (*Hassan v. Mercy American River Hospital* (2003) 31 Cal.4th 709, 715, 3 Cal.Rptr.3d 623, 74 P.3d 726; *Esberg v. Union Oil Co.* (2002) 28 Cal.4th 262, 268, 121 Cal.Rptr.2d 203, 47 P.3d 1069.) In doing this, we look to the statutory language, which ordinarily is “the most reliable indicator of legislative intent.” (*Hassan, supra*, at p. 715, 3 Cal.Rptr.3d 623, 74 P.3d 726.)

As mentioned earlier, our Legislature's 1969 enactment of the Porter–Cologne Act, which sought to ensure the high quality of water in this state, predated the 1972 enactment by Congress of the precursor to the federal Clean Water Act. Included in California's original Porter–Cologne Act were [sections 13263](#) and [13241](#). [Section 13263](#) directs regional boards, when issuing wastewater discharge permits, to take into account various factors, including those set out in [section 13241](#). Listed among the [section 13241](#) factors is “[e]conomic considerations.” (§ [13241](#), subd. (d).) The plain language of [sections 13263](#) and [13241](#) indicates the Legislature's intent in 1969, when these statutes were enacted, that a regional board consider the cost of compliance when setting effluent limitations in a wastewater discharge permit.

Our construction of [sections 13263](#) and [13241](#) does not end with their plain statutory language, however. We must also analyze them in the context of the statutory scheme of which they are a part. ***[312](#) (*State Farm Mutual Automobile Ins. Co. v. Garamendi* (2004) 32 Cal.4th 1029, 1043, 12 Cal.Rptr.3d 343, 88 P.3d 71.) Like [sections 13263](#) and [13241](#), [section 13377](#) is part of the Porter–Cologne Act. But unlike the former two statutes, [section 13377](#) was *[626](#) not enacted until 1972, shortly after Congress, through adoption of the Federal Water Pollution Control Act Amendments, established a comprehensive water quality policy for the nation.

[4] [Section 13377](#) specifies that wastewater discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, [section 13377](#) forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act. That act prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law (33 U.S.C. § [1311\(a\)](#)), and publicly operated wastewater treatment plants such as those before us here must comply with the act's clean water standards, regardless of cost (see *id.*, §§ [1311\(a\)](#), [\(b\)\(1\)\(B\)](#) & [\(C\)](#), [1342\(a\)\(1\)](#) & [\(3\)](#)). Because [section 13263](#) cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a wastewater discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards.⁷ Such a construction of [section 13263](#) would not only be inconsistent with federal

law, it would also be inconsistent with the Legislature's **[870](#) declaration in [section 13377](#) that all discharged wastewater must satisfy federal standards.⁸ This was also the conclusion of the Court of Appeal. Moreover, under the federal Constitution's supremacy clause (art. VI), a state law that conflicts with federal law is “without effect.” (*Cipollone v. Liggett Group, Inc.* (1992) 505 U.S. 504, 516, 112 S.Ct. 2608, 120 L.Ed.2d 407; *Dowhal v. SmithKline Beecham Consumer Healthcare* (2004) 32 Cal.4th 910, 923, 12 Cal.Rptr.3d 262, 88 P.3d 1.) To comport with the principles of federal supremacy, California law cannot authorize this *[627](#) state's regional boards to allow the discharge of pollutants into the navigable waters of the United States in concentrations ***[313](#) that would exceed the mandates of federal law.

Thus, in this case, whether the Los Angeles Regional Board should have complied with [sections 13263](#) and [13241](#) of California's Porter–Cologne Act by taking into account “economic considerations,” such as the costs the permit holder will incur to comply with the numeric pollutant restrictions set out in the permits, depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act. We therefore remand this matter for the trial court to resolve that issue.

C. Other Contentions

The Cities argue that requiring a regional board at the wastewater discharge permit stage to consider the permit holder's cost of complying with the board's restrictions on pollutant content in the water is consistent with federal law. In support, the Cities point to certain provisions of the federal Clean Water Act. They cite [section 1251\(a\)\(2\)](#) of title 33 United States Code, which sets, as a national goal “wherever attainable,” an interim goal for water quality that protects fish and wildlife, and [section 1313\(c\)\(2\)\(A\)](#) of the same title, which requires consideration, among other things, of waters' “use and value for navigation” when revising or adopting a “water quality standard.” (Italics added.) These two federal statutes, however, pertain not to permits for wastewater discharge, at issue here, but to establishing water quality standards, not at issue here. Nothing in the federal Clean Water Act suggests that a state is free to disregard or to weaken the federal requirements for clean water when an NPDES permit holder alleges that compliance with those requirements will be too costly.

[5] At oral argument, counsel for amicus curiae National Resources Defense Council, which argued on behalf of California's State Board and regional water boards, asserted that the federal Clean Water Act incorporates state water policy into federal law, and that therefore a regional board's consideration of economic factors to justify greater pollutant concentration in discharged wastewater would conflict with the federal act even if the specified pollutant restrictions were not less stringent than those required under federal law. We are not persuaded. The federal Clean Water Act reserves to the states significant aspects of water quality policy (33 U.S.C. § 1251(b)), and it specifically grants the states authority to “enforce any effluent limitation” that is not “*less stringent*” than the federal standard (*id.* § 1370, italics added). It does not prescribe or restrict the factors that a state may consider when exercising this reserved authority, and thus it does not prohibit *628 a state—when imposing effluent limitations that are *more stringent* than required by federal law—from taking into account the economic effects of doing so.

Also at oral argument, counsel for the Cities asserted that if the three municipal wastewater treatment facilities ceased releasing their treated wastewater into the concrete channel that makes up the Los Angeles River, it would (other than during the rainy season) contain no water at all, and thus would not be a “navigable water” of the **871 United States subject to the Clean Water Act. (See *Solid Waste Agency v. United States Army Corps of Engineers* (2001) 531 U.S. 159, 172, 121 S.Ct. 675, 148 L.Ed.2d 576 [“The term ‘navigable’ has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made.”].) It is unclear when the Cities first raised this issue. The Court of Appeal did not discuss it in its opinion, and the Cities did not seek rehearing on this ground. (See ***314 Cal. Rules of Court, rule 28(c)(2).) Concluding that the issue is outside our grant of review, we do not address it.

CONCLUSION

Through the federal Clean Water Act, Congress has regulated the release of pollutants into our national waterways. The states are free to manage their own water quality programs so long as they do not compromise

the federal clean water standards. When enacted in 1972, the goal of the Federal Water Pollution Control Act Amendments was to *eliminate* by the year 1985 the discharge of pollutants into the nation's navigable waters. In furtherance of that goal, the Los Angeles Regional Board indicated in its 1994 basin plan on water quality the intent, insofar as possible, to remove from the water in the Los Angeles River toxic substances in amounts harmful to humans, plants, and aquatic life. What is not clear from the record before us is whether, in limiting the chemical pollutant content of wastewater to be discharged by the Tillman, Los Angeles–Glendale, and Burbank wastewater treatment facilities, the Los Angeles Regional Board acted only to implement requirements of the federal Clean Water Act or instead imposed pollutant limitations that exceeded the federal requirements. This is an issue of fact to be resolved by the trial court.

DISPOSITION

We affirm the judgment of the Court of Appeal reinstating the wastewater discharge permits to the extent that the specified numeric limitations on chemical pollutants are necessary to satisfy federal Clean Water Act requirements for treated wastewater. The Court of Appeal is directed to remand this *629 matter to the trial court to decide whether any numeric limitations, as described in the permits, are “more stringent” than required under federal law and thus should have been subject to “economic considerations” by the Los Angeles Regional Board before inclusion in the permits.

WE CONCUR: [GEORGE, C.J.](#), [BAXTER, WERDEGAR, CHIN](#), and [MORENO, JJ.](#)

Concurring Opinion by [BROWN, J.](#)

I write separately to express my frustration with the apparent inability of the government officials involved here to answer a simple question: How do the federal clean water standards (which, as near as I can determine, are the state standards) prevent the state from considering economic factors? The majority concludes that because “the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic factors to justify imposing pollutant

restrictions that are *less stringent* than applicable federal standards require.” (Maj. opn., *ante*, 26 Cal.Rptr.3d at p. 306, 108 P.3d at p. 864.) That seems a pretty self-evident proposition, but not a useful one. The real question, in my view, is whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions that *meet* the clean water standards in more cost-effective and economically efficient ways. I can see no reason why a federal law—which purports to be an example of cooperative federalism—would decree such a result. I do not think the majority’s reasoning is at fault here. Rather, the agencies involved seemed to have worked hard to make this simple question impenetrably obscure.

A brief review of the statutory framework at issue is necessary to understand my concerns.

***315 **872 I. Federal Law

“In 1972, Congress enacted the Federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*), commonly known as the Clean Water Act (CWA) [Citation.] ... [¶] Generally, the CWA ‘prohibits the discharge of any pollutant except in compliance with one of several statutory exceptions. [Citation.]’ ... The most important of those exceptions is pollution discharge under a valid NPDES [National Pollution Discharge Elimination System] permit, which can be issued either by the Environmental Protection Agency (EPA), or by an EPA-approved state permit program such as California’s. [Citations.] NPDES permits are valid for five years. [Citation.] [¶] Under the CWA’s NPDES permit program, the states are required to develop *water quality standards*. [Citations.] A water quality standard ‘establish[es] the desired condition of a waterway.’ [Citation.] A water quality standard for any *630 given waterway, or ‘water body,’ has two components: (1) the designated beneficial uses of the water body and (2) the *water quality criteria* sufficient to protect those uses. [Citations.] [¶] Water quality criteria can be either *narrative* or *numeric*. [Citation.]” (*Communities for a Better Environment v. State Water Resources Control Bd.* (2003) 109 Cal.App.4th 1089, 1092–1093, 1 Cal.Rptr.3d 76.)

With respect to satisfying water quality standards, “a polluter must comply with *effluent limitations*. The CWA defines an effluent limitation as ‘any restriction

established by a State or the [EPA] Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance.’ [Citation.] ‘Effluent limitations are a means of *achieving* water quality standards.’ [Citation.] [¶] NPDES permits establish effluent limitations for the polluter. [Citations.] CWA’s NPDES permit system provides for a two-step process for the establishing of effluent limitations. First, the polluter must comply with *technology-based effluent limitations*, which are limitations based on the best available or practical technology for the reduction of water pollution. [Citations.] [¶] Second, the polluter must also comply with more stringent *water quality-based effluent limitations* (WQBEL’s) where applicable. In the CWA, Congress ‘supplemented the “technology-based” effluent limitations with “water quality-based” limitations “so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.’ ” [Citation.] [¶] The CWA makes WQBEL’s applicable to a given polluter whenever WQBEL’s are ‘necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations....’ [Citations.] Generally, NPDES permits must conform to state water quality laws insofar as the state laws impose more stringent pollution controls than the CWA. [Citations.] Simply put, WQBEL’s implement water quality standards.” (*Communities for a Better Environment v. State Water Resources Control Bd.*, *supra*, 109 Cal.App.4th at pp. 1093–1094, 1 Cal.Rptr.3d 76, *fn.* omitted.)

This case involves water quality-based effluent limitations. As set forth above, “[u]nder the CWA, states have the primary role in promulgating water quality standards.” (*Piney Run Preservation Ass’n v. Commrs. of Carroll Co.* (4th Cir.2001) 268 F.3d 255, 265, *fn.* 9.) “Under the CWA, the water quality standards referred to in section 301 [see 33 U.S.C. § 1311] are primarily the states’ handiwork.” ***316 (*American Paper Institute, Inc. v. U.S. Envtl. Protection Agency* (D.C.Cir.1993) 996 F.2d 346, 349 (*American Paper*).) In fact, upon the 1972 passage of the CWA, “[s]tate water quality standards in effect at the time ... were deemed to be the initial water quality benchmarks for CWA purposes.... The states were to revisit and, if *631 necessary, revise

those initial standards at least once every three years.” (*American Paper*, at p. 349.) Therefore, “once a water quality standard has been promulgated, section 301 of the CWA requires all NPDES permits for point sources to incorporate discharge limitations necessary to satisfy that standard.” (*American Paper*, at p. 350.) Accordingly, it appears that in most instances, ****873** state water quality standards are identical to the federal requirements for NPDES permits.

II. State Law

In California, pursuant to the Porter–Cologne Water Quality Control Act (*Wat.Code*, § 13000 et seq.; Stats.1969, ch. 482, § 18, p. 1051; hereafter Porter–Cologne Act), the regional water quality control boards establish water quality standards—and therefore federal requirements for NPDES permits—through the adoption of water quality control plans (basin plans). The basin plans establish water quality objectives using enumerated factors—including economic factors—set forth in *Water Code* section 13241.

In addition, as one court observed: “The Porter–Cologne Act ... established nine regional boards to prepare water quality plans (known as basin plans) and issue permits governing the discharge of waste. (*Wat.Code*, §§ 13100, 13140, 13200, 13201, 13240, 13241, 13243.) The Porter–Cologne Act identified these permits as ‘waste discharge requirements,’ and provided that the waste discharge requirements must mandate compliance with the applicable regional water quality control plan. (*Wat.Code*, §§ 13263, subd. (a), 13377, 13374.)^[¶] Shortly after Congress enacted the Clean Water Act in 1972, the California Legislature added Chapter 5.5 to the Porter–Cologne Act, for the purpose of adopting the necessary federal requirements to ensure it would obtain EPA approval to issue NPDES permits. (*Wat.Code*, § 13370, subd. (c).) As part of these amendments, the Legislature provided that the state and regional water boards ‘shall, as required or authorized by the [Clean Water Act], issue waste discharge requirements ... which apply and ensure compliance with all applicable provisions [of the Clean Water Act], together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.’ (*Wat.Code*, § 13377.) *Water Code* section 13374 provides that ‘[t]he

term “waste discharge requirements” as referred to in this division is the equivalent of the term “permits” as used in the [Clean Water Act].’^[¶] California subsequently obtained the required approval to issue NPDES permits. [Citation.] Thus, the waste discharge requirements issued by the regional water boards ordinarily also serve as NPDES permits under federal law. (*Wat.Code*, § 13374.)” (*Building Industry Assn. of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 875, 22 Cal.Rptr.3d 128.)

***632** Applying this federal-state statutory scheme, it appears that throughout this entire process, the Cities of Burbank and Los Angeles (Cities) were unable to have economic factors considered because the Los Angeles Regional Water Quality Control Board (Board)—the body responsible to enforce the statutory framework—failed to comply with its statutory mandate.

*****317** For example, as the trial court found, the Board did not consider costs of compliance when it initially established its basin plan, and hence the water quality standards. The Board thus failed to abide by the statutory requirement set forth in *Water Code* section 13241 in establishing its basin plan. Moreover, the Cities claim that the initial narrative standards were so vague as to make a serious economic analysis impracticable. Because the Board does not allow the Cities to raise their economic factors in the permit approval stage, they are effectively precluded from doing so. As a result, the Board appears to be playing a game of “gotcha” by allowing the Cities to raise economic considerations when it is not practical, but precluding them when they have the ability to do so.

Moreover, the Board acknowledges that it has neglected other statutory provisions that might have provided an additional opportunity to air these concerns. As set forth above, pursuant to the CWA, “[t]he states were to revisit and, if necessary, revise those initial standards at least once every three years—a process commonly known as triennial review. [Citation.] Triennial reviews consist of public hearings in which current water quality standards are examined to assure that they ‘protect the public health or welfare, enhance the quality of water and serve the purposes’ of the Act. [Citation.] Additionally, the CWA ****874** directs states to consider a variety of competing policy concerns during these reviews, including a waterway’s ‘use and value for public water supplies, propagation of fish and wildlife, recreational purposes,

and agricultural, industrial, and other purposes.’ ”
(*American Paper*, *supra*, 996 F.2d at p. 349.)

According to the Cities, “[t]he last time that the narrative water quality objective for toxicity contained in the Basin Plan was reviewed and modified was 1994.” The Board does not deny this claim. Accordingly, the Board has failed its duty to allow public discussion—including economic considerations—at the required intervals when making its determination of proper water quality standards.

What is unclear is why this process should be viewed as a contest. State and local agencies are presumably on the same side. The costs will be paid by taxpayers and the Board should have as much interest as any other agency in fiscally responsible environmental solutions.

*633 Our decision today arguably allows the Board to continue to shirk its statutory duties. The majority holds that when read together, [Water Code sections 13241](#), [13263](#), and [13377](#) do not allow the Board to consider economic factors when issuing NPDES permits to satisfy federal CWA requirements. (Maj. opn., *ante*, 26 Cal.Rptr.3d at pp. 311–312, 108 P.3d at pp. 869–870.) The majority then bifurcates the issue when it orders the Court of Appeal “to remand this matter to the trial court to decide whether any numeric limitations, as described in the permits, are ‘more stringent’ than required under federal law and thus should have been subject to ‘economic considerations’ by the Los Angeles Regional Board before inclusion in the permits.” (*Id.* at p. 314, 108 P.3d at p. 871.)

The majority overlooks the feedback loop established by the CWA, under which federal standards are linked to state-established water quality standards, including narrative water quality criteria. (See [33 U.S.C. § 1311\(b\)\(1\)\(C\)](#); [40 C.F.R. § 122.44\(d\)\(1\) \(2004\)](#).) Under the CWA, NPDES permit requirements include the state narrative criteria, which are incorporated into the Board's basin plan under the description “no toxins in toxic amounts.”

As far as I can determine, NPDES permits ***318 designed to achieve this narrative criteria (as well as designated beneficial uses) will usually implement the state's basin plan, while satisfying federal requirements as well.

If federal water quality standards are typically identical to state standards, it will be a rare instance that a state exceeds its own requirements and economic factors are taken into consideration.¹ In light of the Board's initial failure to consider costs of compliance and its repeated failure to conduct required triennial reviews, the result here is an unseemly bureaucratic bait-and-switch that we should not endorse. The likely outcome of the majority's decision is that the Cities will be economically burdened to meet standards imposed on them in a highly questionable manner.² In these times of tight fiscal budgets, it is difficult to imagine imposing additional financial burdens on municipalities without at least allowing them to present alternative views.

Based on the facts of this case, our opinion today appears to largely retain the status quo for the Board. If the Board can actually demonstrate that only the precise limitations at issue here, implemented in only one way, will achieve the desired water standards, perhaps its obduracy is justified. That case has yet to be made.

*634 Accordingly, I cannot conclude that the majority's decision is wrong. The analysis **875 may provide a reasonable accommodation of conflicting provisions. However, since the Board's actions “make me wanna holler and throw up both my hands,”³ I write separately to set forth my concerns and concur in the judgment —*dubitante*.⁴

All Citations

35 Cal.4th 613, 108 P.3d 862, 26 Cal.Rptr.3d 304, 60 ERC 1470, 35 Env'tl. L. Rep. 20,071, 05 Cal. Daily Op. Serv. 2861, 2005 Daily Journal D.A.R. 3870

Footnotes

* [Brown](#), J., did not participate therein.

1 Further undesignated statutory references are to the Water Code.

2 The Los Angeles water region “comprises all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the

southeasterly boundary of Los Angeles County from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages.” (§ 13200, subd. (d).)

- 3 A “point source” is “any discernable, confined and discrete conveyance” and includes “any pipe, ditch, channel ... from which pollutants ... may be discharged.” (33 U.S.C. § 1362(14).)
- 4 This opinion uses the terms “narrative criteria” or descriptions, and “numeric criteria” or effluent limitations. Narrative criteria are broad statements of desirable water quality goals in a water quality plan. For example, “no toxic pollutants in toxic amounts” would be a narrative description. This contrasts with numeric criteria, which detail specific pollutant concentrations, such as parts per million of a particular substance.
- 5 For example, the permits for the Tillman and Los Angeles–Glendale Plants limited the amount of fluoride in the discharged wastewater to 2 milligrams per liter and the amount of mercury to 2.1 micrograms per liter.
- 6 Unchallenged on appeal and thus not affected by our decision are the trial court’s rulings that (1) the Los Angeles Regional Board failed to show how it derived from the narrative criteria in the governing basin plan the specific numeric pollutant limitations included in the permits; (2) the administrative record failed to support the specific effluent limitations; (3) the permits improperly imposed daily maximum limits rather than weekly or monthly averages; and (4) the permits improperly specified the manner of compliance.
- 7 The concurring opinion misconstrues both state and federal clean water law when it describes the issue here as “whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions *that meet the clean water standards in more cost-effective and economically efficient ways.*” (Conc. Opn. of Brown, J., *post*, 26 Cal.Rptr.3d p. 314, 108 P.3d at p. 871, some italics added.) This case has nothing to do with meeting federal standards in more cost effective and economically efficient ways. State law, as we have said, allows a regional board to consider a permit holder’s compliance cost to *relax* pollutant concentrations, as measured by numeric standards, for pollutants in a wastewater discharge permit. (§§ 13241 & 13263.) Federal law, by contrast, as stated above in the text, “prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law (33 U.S.C. § 1311(a)), and publicly operated wastewater treatment plants such as those before us here must comply with the [federal] act’s *clean water standards, regardless of cost* (see *id.*, §§ 1311(a), (b)(1)(B) & (C), 1342(a)(1) & (3)).” (Italics added.)
- 8 As amended in 1978, section 13377 provides for the issuance of waste discharge permits that comply with federal clean water law “together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.” We do not here decide how this provision would affect the cost-consideration requirements of sections 13241 and 13263 when more stringent effluent standards or limitations in a permit are justified for some reason independent of compliance with federal law.
- 1 (But see *In the Matter of the Petition of City and County of San Francisco, San Francisco Baykeeper et al.* (Order No. WQ 95–4, Sept. 21, 1995) 1995 WL 576920.)
- 2 Indeed, given the fact that “water quality standards” in this case are composed of broadly worded components (i.e., a narrative criteria and “designated beneficial uses of the water body”), the Board possessed a high degree of discretion in setting NPDES permit requirements. Based on the Board’s past performance, a proper exercise of this discretion is uncertain.
- 3 Marvin Gaye (1971) “Inner City Blues.”
- 4 I am indebted to Judge Berzon for this useful term. (See *Credit Suisse First Boston Corp. v. Grunwald* (9th Cir.2005) 400 F.3d 1119 (conc. opn. of Berzon, J.).)

 KeyCite Yellow Flag - Negative Treatment
Distinguished by [California State Emp. Ass'n v. Trustees of Cal. State Colleges](#), Cal.App. 1 Dist., October 20, 1965

150 Cal.App.2d 671, 310 P.2d 673

GLENN D. COREY, Appellant,
v.
GOODWIN J. KNIGHT, as Governor,
etc., et al., Defendants; CLARKE GRAY,
as County Auditor, etc., Respondent.

Civ. No. 22068.
District Court of Appeal, Second
District, Division 1, California.
May 6, 1957.

HEADNOTES

(1a, 1b)

Municipal Courts § 7--Judges--Qualifications.
Under [Const., art. VI, § 23](#), declaring that “any elected judge or justice of an existing court who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become a judge of a municipal court by which the existing court is superseded upon the establishment of said municipal court,” plaintiff was ineligible to become judge of the Municipal Court of the Ventura Judicial District where, if the words “existing court” referred to the Justice Court of Ventura Judicial District, plaintiff was ineligible because he had not served as judge of that court for five consecutive years immediately preceding November 7, 1950, the date of adoption of the constitutional amendment, since such court was not in existence before January 5, 1953, and where, if the words “existing court” referred to the Justice's Court of Ventura Township, plaintiff was ineligible because that court could not be “superseded on the establishment of said municipal court” in 1956, since it was superseded on January 5, 1953, and plaintiff became eligible as judge of the Justice Court under [Gov. Code, § 71601](#), solely because he was “the incumbent of a superseded inferior court.”

See [Cal.Jur.2d](#), Courts, § 173 et seq.

(2)

Justices of the Peace and Justice Courts § 1--Distinctions.

A justice's court of a township is not the same as a justice court of a judicial district, since the jurisdiction of a justice's court is not exclusive but may be shared with a police court, whereas the jurisdiction of a justice court is exclusive within its territorial area, the territorial area of a township is not necessarily the same as the territorial area of a judicial district, the presiding officer of a justice's court is a justice of the peace whereas the presiding officer of a justice court is a judge, and there are no qualifications for a justice of the peace whereas a judge of a justice court must either be a lawyer or have passed an examination prescribed by the Judicial Council.

(3)

Statutes § 180(2)--Construction--Executive or Departmental Construction.

Where the attorney general has interpreted a law in a written opinion and that position has been adopted by an administrative agency, the administrative interpretation of such law is entitled to respect by the courts and, unless clearly erroneous, is a significant factor to be considered in ascertaining the meaning of such law.

See [Cal.Jur.](#), Statutes, § 152.

(4)

Statutes § 152--Construction--Words and Phrases.

A word or clause in a statute is presumed to have the same meaning throughout.

(5)

Statutes § 139--Construction--Exceptions.

Exceptions in a statute are to be narrowly, not broadly, construed.

See [Cal.Jur.](#), Statutes, § 119; [Am.Jur.](#), Statutes, § 431 et seq.

(6)

Judges § 17.5--Retirement.

Under the County Employees Retirement Law of 1937 ([Gov. Code, § 31450](#) et seq.), a judge of the justice court of a judicial district who was over 70 years of age at the time of his election to such court must be retired “at the end of the first term to which he is elected and which commences on a date following his 70th birthday” ([Gov. Code, § 31671](#)), and where his term of office will end by operation of law when a municipal court is established and such

court will come into existence when it is found, pursuant to [Gov. Code, § 71043](#), subd. (c), that there are 40,000 inhabitants of the district, at that moment such judge will be compulsorily retired and entitled to retirement benefits under the County Employees Retirement Law of 1937.

SUMMARY

APPEAL from a judgment of the Superior Court of Ventura County. Charles F. Blackstock, Judge. Affirmed.

Action for declaratory relief. Judgment for defendants affirmed.

COUNSEL

Waite & Drapeau and David R. Drapeau for Appellant. Charles Kaplan and Arden T. Jensen as Amici Curiae on behalf of Appellant.

Roy A. Gustafson, District Attorney (Ventura), for Respondent.

FOUR, J.

This is an appeal from a judgment in a declaratory relief action wherein it was adjudged “that if plaintiff is Judge of the Justice Court of the Ventura Judicial District at the time when the district is found to have over 40,000 inhabitants, (1) a Municipal Court will thereupon supersede the Justice Court, (2) plaintiff will be ineligible to be Judge of the Municipal Court, (3) a vacancy will exist to be filled by *673 appointment of the Governor, (4) plaintiff will be compulsorily retired and (5) plaintiff will receive retirement benefits under the County Employees Retirement Law of 1937.”

A resume of the facts in the case is as follows: In about 1947, the Legislature requested the Judicial Council to make a survey of all courts in California exercising jurisdiction inferior to the superior court. After an extensive study the Judicial Council, in 1949, recommended to the Legislature a plan for the reorganization of such courts (Twelfth Biennial Report [1948], Judicial Council of California). The Legislature, through committees, conducted public hearings, and as a result thereof some changes and additions were made in the proposed constitutional amendments and the proposed statutes drafted by the council. The interpretation to be given to some of the words added in one of the constitutional amendments which was proposed and adopted ([art. VI, § 23](#)) is the only real

problem to be determined in this case. The language in question is contained in the “exception” section, generally referred to as the “Grandfather Clause,” the pertinent parts of which are as follows:

“No person shall be eligible to the office of a Justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice of an existing court who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become the judge of a municipal court by which the existing court is superseded upon the establishment of said municipal court or at the first election of judges thereto and for any consecutive terms thereafter for which he may be re-elected. ...”

The Legislature voted to submit the proposed constitutional amendment to the people at the general election, November 7, 1950. The proposition was Number 3 on the ballot at that time, and was adopted by the people by a large majority. At the same election, [section 11 of article VI of the Constitution](#) was amended to provide for only two types of courts inferior to the superior court, namely, justice courts and municipal courts, and further to validate the laws relating to judicial districts enacted in the legislative session of 1949, in anticipation of the adoption of the constitutional amendments. The *674 amendments provided, among other things, in substance, that each county should be divided into judicial districts and that if the population of any district were over 40,000, the district should have a municipal court, or if under 40,000, a justice court. The Legislature, by section 1 of chapter 1511, Statutes 1949, directed the board of supervisors to district their counties. The new plan was to become effective January 1, 1952, except where two or more incumbent judges would be eligible to be judges of the new court, in which case section 2 of chapter 1510, Statutes 1949, provided that they “shall not automatically succeed to judicial positions in the municipal or justice court, and the existing courts shall continue to function within the district until the first judge or judges of said municipal or justice court shall be elected by the qualified electors of the district at the first general state election held following the expiration of 90 days and qualify.”

Article VI, section 11, as amended in 1950, also contained a provision that “existing courts shall continue to function as presently organized until the first selection and qualification of the judge or judges of the municipal or justice court, at which time, unless otherwise provided by law, pending actions, trials and all pending business of existing courts shall be transferred to and become pending in the municipal or justice court established for the judicial district or city and county in which they are situated, and all records of such superseded courts shall be transferred to, and thereafter be and become records of said municipal or justice court.”

On July 6, 1944, Ventura Township was one of nine townships into which Ventura County was divided. The court of Ventura Township was a class B justice court. The justice of the peace who presided over the court died and appellant herein was appointed by the board of supervisors to fill the vacancy.

The city of San Buenaventura (hereinafter referred to as Ventura) is located in the territorial limits of Ventura Township. The charter of Ventura provides for a police court and such court was presided over by Judge B. L. Gregg, a former member of The State Bar. Appellant's original term as justice of the peace expired January 6, 1947. He was elected to that position for the term from January 6, 1947, to January 2, 1951, and was reelected to that position for the term from January 2, 1951, to January 3, 1955. On October 26, 1951, the population of the township having been found to be over 30,000 by the 1950 census, the court became a class A justice court. The boundaries of the Ventura Judicial District were *675 established as of September 4, 1951, by Ordinance Number 472 of the Board of Supervisors of Ventura County, in conformity with the Statutes of 1949. The area of the district included, but was larger than, Ventura Township. The population of the district was less than 40,000.

On January 1, 1952, there were two judicial officers of courts within the area of Ventura Judicial District, namely, appellant as justice of the peace of Ventura Township, and B. L. Gregg as judge of the police court in the city of Ventura. Both were candidates for the office of judge of the Justice Court of Ventura Judicial District at the election in 1952. Appellant was not and never has been an attorney, and had not passed any examination

prescribed by the Judicial Council. Appellant, who was over 70 years of age at the time of the election, was elected and took office as judge of the justice court on January 5, 1953, for the term ending January 5, 1959.

The Justice Court of Ojai Judicial District began functioning in January, 1952, because only one incumbent was eligible to the judgeship. The remaining four districts in Ventura County were inoperative as such, pending the election of judges. Judges were elected in 1952, and the four districts began functioning as such on January 5, 1953, or, in other words, on January 5, 1953, Ventura County had five judicial districts, each with a functioning justice court.

An action was filed in the superior court of Ventura County on July 5, 1956, for the purpose of having it declared that Ventura Judicial District had a population of over 40,000. On September 6, 1956, the trial judge of that court found that there were 40,000 or more persons in the district, and a municipal court is now in existence. Appellant contends that he is eligible to be, and that he is the judge of such municipal court now in existence. Appellant further asserts that he will continue to be a judge of the justice court if found to be ineligible to be the municipal court judge, until a municipal court judge is elected for the term beginning January 5, 1959. Respondent asserts that appellant is ineligible and he cannot pay appellant now that such municipal court is established; that appellant's term is now terminated as of September 6, 1956, the date upon which the municipal court was declared to be in existence, and appellant is compulsorily retired, and that a vacancy existed which was to be filled by appointment by the Governor.

Appellant, in his briefs and in the oral argument, has made *676 issue of the first contention heretofore mentioned, namely, that he is eligible to become judge of the municipal court of Ventura Judicial District, and no argument or authorities were presented on the other matters, and we therefore assume that the disposition of the first question will dispose of this appeal.

Honorable Charles F. Blackstock, the learned trial judge, prepared findings of fact and conclusions of law and in his conclusions set forth the applicable law. We believe that the commentary of the trial judge concisely and correctly sets forth the law and we adopt his statements in reference thereto, as follows:

“Both parties concede that if Ventura Judicial District is found to have a population of 40,000 persons and if plaintiff is eligible to be a municipal court judge, the court will begin to function immediately with plaintiff as judge. [Government Code, section 71080](#). Not being an attorney, plaintiff is eligible, if at all, only under this proviso of [section 23 of article VI of the Constitution](#):

“ [A]ny elected judge or justice of an *existing court* who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become a judge of a municipal court by which the *existing court* is *superseded* upon the establishment of said municipal court. ...’ (Emphasis added.)

([1a]) ”The basic question is the meaning of the words ‘existing court.’ The amendment was adopted November 7, 1950. Do the words refer to a court then existing or to a court existing at the time the amendment is invoked?

“The court over which plaintiff presided on November 7, 1950, was the Justice’s Court of Ventura Township. The court over which he now presides is the Justice Court of Ventura Judicial District. If those two courts are the same court (identified by different names), plaintiff is clearly eligible regardless of the time to which the words ‘existing court’ refer.

([2]) ”A Class B Justice’s Court had jurisdiction over cases involving claims up to \$300. A justice court has jurisdiction of claims up to \$500. The jurisdiction of a justice’s court was not exclusive and, in fact, was shared in Ventura Township with the police court. The jurisdiction of the justice court is exclusive within its territorial area. The territorial area of a township was not necessarily the same as the territorial area of a judicial district and, in fact, the boundaries of the Ventura Judicial District are larger than the boundaries of *677 Ventura Township. (There were nine townships in Ventura County, whereas there are only five judicial districts.) The presiding officer of a justice’s court was a justice of the peace. The presiding officer of a justice court is a judge. There were no qualifications for a justice of the peace. A judge of a justice court must either be a lawyer or have passed an examination prescribed by the Judicial Council. The term of a justice of the peace was four years. The term of a judge

of the justice court is six years. It appears, therefore, that the two courts are different and are not the same.

“This conclusion is fortified by language used in the pertinent laws. [Article 6, section 11 of the Constitution](#) refers to the fact that ‘existing courts [in a judicial district] shall continue to function’ until the new justice court is established at which time all records of such superseded courts shall be transferred to [the] ... justice court.’ [Government Code, section 71080](#), provided that where two persons were eligible to be judge of the new justice court (as were Justice of the Peace Glenn Corey and Judge B. L. Gregg in the Ventura Judicial District), ‘such incumbents shall not automatically succeed to judicial positions [on January 1, 1952] in the ... justice court, and the existing courts shall continue to function within the district until the first judge ... of such ... justice court [is] elected [for the term beginning January 5, 1953].’ Similarly, chapter 14, Statutes of 1952, First Extraordinary Session, referred to the fact that:

“ ‘Certain Class B justices’ courts will *remain in existence* until January 5, 1953, under the inferior court reorganization program, after which time there will be no courts in the State inferior to the superior courts except municipal and justice courts.’ (Emphasis added.)

“Thus it is plain that the Justice’s Court of Ventura Township is not the same as the Justice Court of Ventura Judicial District.

([1b]) ”Which, then, is the ‘existing court’ referred to in the eligibility clause of the Constitution? If it is the Justice Court of Ventura Judicial District, plaintiff is ineligible because plaintiff has not ‘served in that capacity [that is, judge] by election or appointment for five consecutive years immediately preceding [November 7, 1950].’ This is so because that court did not exist *before* January 5, 1953. If it is the Justice’s Court of Ventura Township, plaintiff is ineligible because that court will not be ‘superseded upon the establishment of said municipal court.’ This is so because that court *678 did not exist *after* January 5, 1953 and cannot be superseded in 1956. That court was superseded on January 5, 1953, and plaintiff holds his present position pursuant to [section 71601 of the Government Code](#) which made him eligible to be judge of the justice court solely because he was ‘the incumbent of a superseded inferior court.’ In either event, plaintiff is ineligible. (Had a municipal court been established

between November 7, 1950 and January 5, 1953, plaintiff would have been eligible to be judge.)

“The conclusion that plaintiff is ineligible has been reached by the attorney general (21 Ops. Cal. Atty. Gen. 152) and by defendant county auditor. ([3]) Where the attorney general has interpreted a law in a written opinion and that position has been adopted by an administrative agency, the 'administrative application of an act is entitled to respect by the courts, and unless clearly erroneous is a significant factor to be considered in ascertaining the meaning of a statute.' *Mudd v. McColgan* (1947), 30 Cal.2d 463 [183 P.2d 10].

“Proposition 19 on the ballot in 1954 was this:

“ **'Proposed Amendment to Article VI**

“ 'Sec. 23. No person shall be eligible to the office of a justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice who has served by election or appointment *as such judge or justice of a court superseded by a justice or municipal court* for five consecutive years immediately preceding *November 7, 1950, and has served continuously as a judge of such superseding court after said date until the establishment of a municipal court*, shall be eligible to become the judge of a municipal court which *supersedes* the court of *which he is judge* upon the establishment of said municipal court or at the first election of judges thereto and for any consecutive terms thereafter for which he may be re- elected. The requirement of consecutive years of judicial service shall be deemed to have been met even though interrupted by service in the armed forces of the United States during the period of war.' *679

“In the pamphlet sent to all voters, the following argument was made in favor of the proposition:

“ 'The voters of California at the 1950 general election adopted a constitutional amendment providing for the reorganization of the inferior courts of this State and reducing the number of such courts to two classes known as municipal courts and justice courts. The Constitution then required admission to practice law before the Supreme Court for at least five years before a person

is eligible to be a municipal court judge. The 1950 amendment made any elective judge or justice of an existing court superseded by a municipal court eligible to become judge if he had served in his present capacity for five consecutive years immediately preceding the effective date of the amendment. It was the intent and spirit of the amendment that experienced incumbent Justices of the Peace would be permitted to continue in office, even though their courts were changed to municipal courts without requiring that they be lawyers.

“ 'The Attorney General of California last year gave an opinion that the present Justices who are not attorneys would not be eligible to become the judges of municipal courts when such a court succeeds their justice courts.

“ 'Following the opinion of the Attorney General, both houses of the Legislature unanimously voted to submit the present amendment to the Constitution, for the reason that it was the consensus of the Legislature that incumbent Justices who qualify as to consecutive years of service should not be ineligible to continue as municipal court judges because they are not attorneys.

“ 'By adopting the present amendment, the people will remove any doubt as to the status of incumbent Justices who are not attorneys and they will be eligible to become municipal judges upon the conversion of their courts if they were eligible to do so in 1950.

“ 'There should be nothing in the administration of justice in municipal courts which requires men who have had long experience as judges to be attorneys. The Justices of the Peace have always been close to the people and responsive to their needs in matters over which they have jurisdiction, and it is felt that when a Justice has been in office for many years, he has met with approval at the hands of the people, even though he is not an attorney.

“ 'This amendment merits the approval of the people for the reasons herein set forth, in order to protect incumbent *680 Justices as to their eligibility for office, even though they are not attorneys.

“ 'J. B. Cooke,

State Assemblyman, 37th Dist.'

“Had it been passed, it would have been presumed to have been passed with full knowledge of the attorney general's opinion (*Coca-Cola Co. v. State Board of Equalization* [1945], 25 Cal.2d 918 [156 P.2d 1]) and it would have been presumed to have changed the law, rather than to have 'clarified' it. (*Loew's, Inc. v. Byram* (1938), 11 Cal.2d 746 [82 P.2d 1]). Having failed of passage, there is a presumption that the provision means what the attorney general said it means. The interpretation by the attorney general is the same as this court has reached independently.

“Plaintiff's only possible hope is that the court will, as he urges it to do, 'attach separate meanings to the two uses of the term "existing court." ' In other words, plaintiff says that 'existing court' means the Justice's Court of Ventura Township in the first part of the sentence and means the Justice Court of Ventura Judicial District in the second part of the sentence. ([4]) This construction is not reasonable because a word or clause in a statute is presumed to have the same meaning throughout. *Pitte v. Shipley* (1873), 46 Cal. 154; *Hoag v. Howard* (1880), 55 Cal. 564. ([5]) Even if reasonable, that construction would be extremely broad and exceptions are to be narrowly, not broadly, construed. *City of National City v. Fritz* (1949), 33 Cal.2d 635 [204 P.2d 7].

([6]) “Plaintiff, as an elective officer, must be retired 'at the end of the first term to which he is elected and which commences on a date following his 70th birthday.' (*Gov. Code, § 31671.*) His term of office will end, by operation of law, when a Municipal Court is established. 'In

each district containing a population of more than 40,000 inhabitants ... there shall be a municipal court.' *Constitution, article VI, section 11.* 'Whenever a municipal court is established in a district in which a justice court was previously established ..., the justice court shall cease to exist ...' *Government Code, section 71084.* A 'vacancy in the office of judge of a municipal court shall be filled by appointment by the Governor ...' *Government Code, section 71180.* (If plaintiff were eligible, he would automatically become judge of the municipal court. If two or more incumbent judges were eligible to one position of judge of the municipal court, the court would not begin to function until January, 1959, following *681 the election of a judge in 1958. *Gov. Code, section 71080, 71081.* Neither of these situations exists in this case.) Since the necessary legislation exists for a municipal court in the Ventura Judicial District (*Gov. Code, §§ 74880-74887*), the court will come into existence when it is found, pursuant to *section 71043, subdivision (c)*, of the Government Code, that there are 40,000 inhabitants of the district. At that moment plaintiff will be compulsorily retired and will be entitled to retirement benefits under the County Employees Retirement Law of 1937.”

The judgment is affirmed.

White, P. J., and Doran, J., concurred.

Appellant's petition for a hearing by the Supreme Court was denied July 3, 1957.

7 Cal.App.5th 628
Court of Appeal,
Third District, California.

DEPARTMENT OF ALCOHOLIC
BEVERAGE CONTROL, Petitioner,
v.
ALCOHOLIC BEVERAGE CONTROL
APPEALS BOARD, Respondent;
Garfield Beach CVS, LLC et
al., Real Parties in Interest.

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Filed 1/17/2017

Synopsis

Background: Department of Alcoholic Beverage Control appealed decision of the Alcoholic Beverage Control Appeals Board, No. AB9434, which reversed suspension of store's off-sale general license for selling alcohol to a minor decoy.

Holdings: The Court of Appeal, Hoch, J., held that:

[1] Alcoholic Beverage Control rule which required that minor decoys “truthfully answer any questions about his or her age,” did not require minor decoy to truthfully respond to clerk's statement, after looking at driver's license, that “I would not have guessed it, you must get asked a lot,” as rule only required decoys to answer questions, and

[2] rule did not impose affirmative duty on minor decoy to speak up in order to clarify any mistake regarding age articulated by sales clerk.

Annulled; reinstated and remanded.

West Headnotes (15)

- [1] **Intoxicating Liquors**
➔ Scope and extent of review in general

In the absence of a clear abuse of discretion, the courts will uphold the decision of the Department of Alcoholic Beverage Control to suspend a liquor license for violation of the liquor laws. [Cal. Const. art. 20, § 22.](#)

[Cases that cite this headnote](#)

- [2] **Intoxicating Liquors**
➔ Direct control by state agencies
Intoxicating Liquors
➔ Administrative officers and proceedings
Intoxicating Liquors
➔ Judicial review and enforcement

The administration of the Alcoholic Beverage Control Act, within the scope of the purposes of that act, is initially vested in the Department of Alcoholic Beverage Control; its decisions, however, are subject to administrative review by the Alcohol Beverage Control Appeals Board, and a final order of the Board is, in turn, subject to judicial review. [Cal. Bus. & Prof. Code § 23000 et seq.](#)

[Cases that cite this headnote](#)

- [3] **Intoxicating Liquors**
➔ Administrative officers and proceedings
Intoxicating Liquors
➔ Judicial review and enforcement

The scope of review of the decisions of the Department of Alcoholic Beverage Control is the same in the Alcohol Beverage Control Appeals Board and the Court of Appeal. [Cal. Bus. & Prof. Code § 23090.2.](#)

[Cases that cite this headnote](#)

- [4] **Intoxicating Liquors**
➔ Judicial review and enforcement

Court of Appeal defers to the Department of Alcoholic Beverage Control's interpretation of its own rules, since the agency is likely to be intimately familiar with regulations it authored and sensitive to the practical

implications of one interpretation over another. [Cal. Bus. & Prof. Code § 23090.2](#).

[Cases that cite this headnote](#)

[5] Intoxicating Liquors

 [Judicial review and enforcement](#)

Courts generally will not depart from the Department of Alcoholic Beverage Control's contemporaneous construction of a rule enforced by the Department unless such interpretation is clearly erroneous or unauthorized. [Cal. Bus. & Prof. Code § 23090.2](#).

[Cases that cite this headnote](#)

[6] Intoxicating Liquors

 [Judicial review and enforcement](#)

Decisions of the Department of Alcoholic Beverage Control are subject to review only for insufficiency of the evidence, excess of jurisdiction, errors of law, or abuse of discretion. [Cal. Bus. & Prof. Code § 23090.2](#).

[Cases that cite this headnote](#)

[7] Intoxicating Liquors

 [To Minors](#)

Alcoholic Beverage Control rule which required that minor decoys “truthfully answer any questions about his or her age,” did not require minor decoy to truthfully respond to clerk's statement, after looking at driver's license, that “I would not have guessed it, you must get asked a lot,” as rule only required decoys to answer questions. [Cal. Bus. & Prof. Code § 25658\(a\)](#); [Cal. Code Regs. tit. 4, § 141\(b\)\(4\)](#).

[Cases that cite this headnote](#)

[8] Intoxicating Liquors

 [To Minors](#)

Under Department of Alcoholic Beverage Control rule providing that “a decoy shall answer truthfully any questions about his or her age,” minor decoys do not need to respond

to statements of any kind, nor do they need to respond truthfully to questions other than those concerning their ages. [Cal. Bus. & Prof. Code § 25658\(a\)](#); [Cal. Code Regs. tit. 4, § 141\(b\)\(4\)](#).

[Cases that cite this headnote](#)

[9] Intoxicating Liquors

 [To Minors](#)

Department of Alcoholic Beverage Control rule providing that “a decoy shall answer truthfully any questions about his or her age” does not require minor decoys to correct mistakes articulated by licensed alcohol sellers; instead, the decoys need to respond truthfully only to questions about their ages. [Cal. Bus. & Prof. Code § 25658\(a\)](#); [Cal. Code Regs. tit. 4, § 141\(b\)\(4\)](#).

[Cases that cite this headnote](#)

[10] Intoxicating Liquors

 [To Minors](#)

Alcoholic Beverage Control rule regarding use of minor decoys, which allowed law enforcement to use decoys “in a fashion that promotes fairness,” did not impose affirmative duty on minor decoy to speak up in order to clarify any mistake regarding age articulated by sales clerk who stated, after looking at driver's license, that “I would not have guessed it, you must get asked a lot”; rule implement goal of fairness by imposing five specific requirements, minor decoy did not say anything untrue but rather presented accurate information in the form of his driver license, and minor decoy's silence did not involve any attempt to pressure or encourage the sale of an alcoholic beverage to him. [Cal. Bus. & Prof. Code § 25658\(a\)](#); [Cal. Code Regs. tit. 4, § 141](#).

[Cases that cite this headnote](#)

[11] Intoxicating Liquors

 [Judicial review and enforcement](#)

Court of Appeal may take judicial notice of decisions of the Alcoholic Beverage Control Appeals Board.

& Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141(b)(4).

Cases that cite this headnote

Cases that cite this headnote

[12] Intoxicating Liquors

🔑 Judicial review and enforcement

Although not bound by the decisions of the Alcoholic Beverage Control Appeals Board, Court of Appeal would take judicial notice of their decisions and consider their reasoning for persuasive value when determining whether rule regarding use of minor decoys, which required law enforcement to use minor decoys “in a fashion that promotes fairness,” was ambiguous. Cal. Code Regs. tit. 4, § 141(a).

Cases that cite this headnote

[13] Statutes

🔑 Exceptions, Limitations, and Conditions

An exception to a statute is to be narrowly construed.

Cases that cite this headnote

[14] Statutes

🔑 Exceptions, Limitations, and Conditions

When a statute specifies an exception, no others may be added under the guise of judicial construction.

Cases that cite this headnote

[15] Intoxicating Liquors

🔑 Evidence

Minor decoy's testimony in proceedings to suspend liquor store's off-sale general license was sufficient to support finding that store clerk's words regarding liquor purchase were a statement, rather than a question about decoy's age to which decoy was required to respond truthfully; decoy's testimony, including that clerk stated “I would not have guessed it, you must get asked a lot,” or words to that effect, was clear and credible. Cal. Bus.

****132 ORIGINAL PROCEEDING:** Petition for writ of review. Petition granted. Alcoholic Beverage Control Appeals Board No. AB9434.

Attorneys and Law Firms

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Opinion

HOCH, J.

***630** California Constitution, article XX, section 22, prohibits the sale of alcoholic beverages to persons under 21 years of age. (See also [Bus. & Prof. Code](#), § 25658, subd. (a)),¹ [making it a misdemeanor to sell alcohol to a person under 21 years of age]. Here, the Department of Alcoholic Beverage Control (Department) issued a 15-day suspension of an off-sale general license held by the Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174 (CVS) after an administrative law judge found the store clerk sold alcohol to a minor decoy.² The Alcohol Beverage Control Appeals Board (Appeals Board) reversed the suspension based on [California Code of Regulations, title 4, section 141](#) (Rule 141) that allows a law enforcement agency to use an underage decoy only “in a ‘fashion that promotes fairness.’ (*Id.*, subd. (a).) In the Appeals Board's view, the suspension was unfair because the minor decoy did not respond about his age when the store clerk looked at his driver license and remarked, “I would never have guessed it, you must get asked a lot.” To challenge the reversal

of the license suspension, the Department petitioned for a writ of review in this court. (§ 23090.)

The Department contends it correctly interprets Rule 141 to require minor decoys to answer only questions about their ages. Based on the administrative law judge's finding in this case that the store clerk's remark constituted a statement rather than a question, the Department argues its decision was legally correct and supported by substantial evidence. The Appeals Board counters Rule 141 is ambiguous and results "in confusion and manifest unfairness." And CVS argues the Department's interpretation of Rule 141 unfairly allows decoys to remain silent in the face of mistaken statements about age. According to CVS, affirming the license suspension would allow deceptive and misleading silence in the face of a store clerk's explicit mistake about the minor decoy's age.

We conclude Rule 141 is not ambiguous in requiring minor decoys to answer truthfully only questions about their ages. Because substantial evidence supports the administrative law judge's factual finding the decoy in this case was not questioned about his age, we determine as a matter of law that Rule 141 does not provide CVS with a defense to the accusation it sold an alcoholic beverage to an underage buyer. Accordingly, we annul the Appeals Board's decision.

BACKGROUND

The Department's Imposition of a 15-day License Suspension

In October 2013, the Department accused CVS of selling alcohol to an underage person at its Garfield Beach store. An administrative hearing was *632 held in February 2014, in which the administrative law judge made the following findings of fact:

CVS has held an off-sale general license to sell alcohol since June 2009, with no prior record of discipline by the Department. On June 3, 2013, Joseph Childers was 18 years old and had the appearance and mannerisms of a person under the age of 21. On that date, Childers accompanied **134 Department agents and law enforcement officers to conduct an alcoholic beverage decoy operation at the Garfield Beach CVS store. Childers entered the store at 2:30 p.m., went to the beer cooler

where he selected a 24-ounce bottle of beer, and took the beer to the checkout line. The CVS store clerk scanned the bottle of beer and asked Childers for identification. Childers handed his California driver license to the clerk. The driver license indicated Childers's date of birth and had a red stripe with white letters that stated, "AGE 21 IN 2015." In addition, the driver license had a blue stripe with white letters that stated, "PROVISIONAL UNTIL AGE 18 IN 2012."

The administrative law judge made the following factual findings: "The clerk looked at Childers's [driver license], tried to scan it, and looked at the [license] again. She then stated, 'I would not have guessed it, you must get asked a lot,' or words to that effect. The clerk's remark was framed as a statement not a question. The decoy did not say anything to the clerk in response to her remark. He thought the clerk's statement was 'casual conversation.' The decoy also testified the statement might or might not have been related to his age. Thus, in his mind it was unclear what the clerk meant by her statement. [¶] The clerk sold Childers the 24-ounce bottle of Corona beer. At no time during the transaction did the clerk ask Childers how old he was or his age. Following the sale of the beer, the decoy exited the premises." The administrative law judge found Childers's testimony at the hearing to be clear, concise, and credible. On this basis, the administrative law judge decided there was cause to suspend CVS's off-sale general license for 15 days.

In April 2014, the Department adopted the administrative law judge's proposed decision as its decision in this case. CVS appealed the decision to the Appeals Board.

The Appeals Board's Reversal of License Suspension

In January 2015, the Appeals Board issued its decision. The Appeals Board's decision relied upon its prior decision to conclude Rule 141 required the decoy to respond to the store clerk's statement upon looking at his driver license. The Appeals Board's decision emphasized the following testimony by the decoy at the administrative hearing:

*633 "[Counsel for CVS]: [A]fter the clerk made that statement to you, what did you take that statement to mean?

"A. [Childers]: Casual conversation.

“Q. And [in] that casual conversation did you see it related in any way to your age?”

“A. Yes and no.

“Q. When you say ‘Yes and no,’ what do you mean?”

“A. Yes, that maybe *I looked younger*. No, because she *thought I was older* or thought that I do it a lot, you know.”

The Appeals Board reasoned that “[w]hen the decoy believes, as here, that a clerk’s remarks are ambiguous as to his or her age, the decoy has an obligation to respond verbally and truthfully. That is the plain meaning of rule 141(a)’s language instructing that minor decoy operations must be conducted in a ‘fashion that promotes fairness.’ ” (Italics omitted.) The Appeals Board further stated that whenever “the decoy him or herself interprets a seller’s comments to *in any way* pertain to the decoy’s age, the Department should insist that decoy err on the side of responding with clarification.” On these grounds, the Appeals Board reversed the Department’s decision and rescinded the ****135** suspension of CVS’s off-sale general license.

Petition for Writ of Review

In February 2015, the Department filed in this court a petition for writ of review from the decision of the Appeals Board. We issued a writ of review in March 2015. (§ 23090.)

DISCUSSION

I

Standard of Review

[1] [2] In addition to prohibiting the sale of alcohol to minors, the California Constitution “vests the Department with broad discretion to revoke or suspend liquor licenses ‘for good cause’ if continuing the license would be ‘contrary to public welfare or morals.’ (Cal. Const., art. XX, § 22.) In the ***634** absence of a clear abuse of discretion, the courts will uphold the

Department’s decision to suspend a license for violation of the liquor laws. (E.g., *Martin v. Alcoholic Bev. etc. Appeals Bd.* (1959) 52 Cal.2d 238, 248–249 [340 P.2d 1].)” (*Provigo Corp. v. Alcoholic Beverage Control Appeals Bd.* (1994) 7 Cal.4th 561, 566, 28 Cal.Rptr.2d 638, 869 P.2d 1163 (*Provigo*).) “ ‘The administration of the Alcoholic Beverage Control Act, within the scope of the purposes of that act, is initially vested in the department. Its decisions, however, are subject to administrative review by the board and a final order of the board is, in turn, subject to judicial review.’ ” (*Caressa Camille, Inc. v. Alcoholic Beverage Control Appeals Bd.* (2002) 99 Cal.App.4th 1094, 1099, 121 Cal.Rptr.2d 758, quoting *Walsh v. Kirby* (1974) 13 Cal.3d 95, 102, 118 Cal.Rptr. 1, 529 P.2d 33.)

[3] The scope of review of the Department’s decisions is the same in the Appeals Board and this court. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2002) 100 Cal.App.4th 1066, 1071, 123 Cal.Rptr.2d 278 (*Deleuze*).) Section 23090.2 provides that review “shall not extend further than to determine, based on the whole record of the department as certified by the board, whether: [¶] (a) The department has proceeded without or in excess of its jurisdiction. [¶] (b) The department has proceeded in the manner required by law. [¶] (c) The decision of the department is supported by the findings. [¶] (d) The findings in the department’s decision are supported by substantial evidence in the light of the whole record. [¶] (e) There is relevant evidence which, in the exercise of reasonable diligence, could not have been produced or which was improperly excluded at the hearing before the department.” Section 23090.2 also excludes the power to make findings of fact from the scope of review. (*Ibid.*)

[4] [5] [6] In conducting our review, “ ‘[w]e defer to the Department’s interpretation of its own rules, since the agency is likely to be intimately familiar with regulations it authored and sensitive to the practical implications of one interpretation over another.’ (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 12 [78 Cal.Rptr.2d 1, 960 P.2d 1031], (*Yamaha Corp.*).) Courts generally will not depart from the Department’s contemporaneous construction of a rule enforced by the Department unless such interpretation is clearly erroneous or unauthorized. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2003) 109 Cal.App.4th 1687, 1696 [1 Cal.Rptr.3d 339])” (*Department of Alcoholic Beverage Control*

v. Alcoholic Beverage Control Appeals Bd. (2005) 128 Cal.App.4th 1195, 1205, 27 Cal.Rptr.3d 766.) In short, the Department's decisions are **136 “subject to review only for insufficiency of the evidence, excess of jurisdiction, errors of law, or abuse of discretion.” (*Deleuze*, at p. 1072, 123 Cal.Rptr.2d 278.)

*635 II

Rule 141

The Department contends it correctly rejected CVS's reliance on Rule 141 as providing a defense to its sale of alcohol to the underage decoy in this case. We agree.

A.

The Department's Reliance on Minor Decoys

The Department relies on minor decoy operations as an integral part of its enforcement of the constitutional and statutory prohibitions on sales of alcohol to persons under 21 years of age. (Cal. Const., art. XX, § 22; § 25658, subd. (a).) The California Supreme Court has approved of the practice, noting that “[t]he use of underage decoys to enforce laws against unlawful sales to minors clearly *promotes* rather than *hinders*” the California constitutional and statutory prohibitions on sales of alcoholic beverages to minors. (*Provigo*, *supra*, 7 Cal.4th at p. 567, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

The Business and Professions Code provides that “[p]ersons under 21 years of age may be used by peace officers in the enforcement of this section to apprehend licensees, or employees or agents of licensees, or other persons who sell or furnish alcoholic beverages to minors.” (§ 25658, subd. (f).) In pertinent part, subdivision (f) of section 25658 further provides: “Guidelines with respect to the use of persons under 21 years of age as decoys shall be adopted and published by the department in accordance with the rulemaking portion of the Administrative Procedure Act” To comply with subdivision (f) of section 25658, the Department promulgated Rule 141. (*Acapulco Restaurants, Inc. v. Alcoholic Beverage Control Appeals Bd.* (1998) 67

Cal.App.4th 575, 579, 79 Cal.Rptr.2d 126 (*Acapulco Restaurants*)). In its entirety, Rule 141 states:

“(a) A law enforcement agency may only use a person under the age of 21 years to attempt to purchase alcoholic beverages to apprehend licensees, or employees or agents of licensees who sell alcoholic beverages to minors (persons under the age of 21) and to reduce sales of alcoholic beverages to minors in a fashion that promotes fairness.

“(b) The following minimum standards shall apply to actions filed pursuant to [Business and Professions Code Section 25658](#) in which it is alleged that a minor decoy has purchased an alcoholic beverage: [¶] (1) At the time of the operation, the decoy shall be less than 20 years of age; [¶] (2) The decoy *636 shall display the appearance which could generally be expected of a person under 21 years of age, under the actual circumstances presented to the seller of alcoholic beverages at the time of the alleged offense; [¶] (3) A decoy shall either carry his or her own identification showing the decoy's correct date of birth or shall carry no identification; a decoy who carries identification shall present it upon request to any seller of alcoholic beverages; [¶] (4) *A decoy shall answer truthfully any questions about his or her age;* [¶] (5) Following any completed sale, but not later than the time a citation, if any, is issued, the peace officer directing the decoy shall make a reasonable attempt to enter the licensed premises and have the minor decoy who purchased alcoholic beverages make a face to face identification of the alleged seller of the alcoholic beverages.

**137 “(c) Failure to comply with this rule shall be a defense to any action brought pursuant to [Business and Professions Code Section 25658](#).” (Italics added.)

B.

Availability of the Rule 141 Defense

[7] The Appeals Board contends subdivision (b)(4) of Rule 141 required the minor decoy in this case to truthfully respond to the clerk's statement, “I would not have guessed it, you must get asked a lot.” Similarly, CVS argues the minor decoy's lack of response violated Rule 141 and provided a defense to the Department's accusation. The Department counters by noting the

administrative law judge made the factual finding that the CVS clerk's words to the minor decoy constituted a statement rather than a question. On this basis, the Department argues the defense supplied by Rule 141 does not apply here. Resolving these contentions requires us to construe the meaning of Rule 141.

As this court has previously explained, “Generally, the same rules governing the construction and interpretation of statutes apply to the construction and interpretation of administrative regulations. (*In re Richards* (1993) 16 Cal.App.4th 93, 97–98, 19 Cal.Rptr.2d 797.) Accordingly, ‘we begin with the fundamental rule that a court should ascertain the intent of the Legislature so as to effectuate the purpose of the law.’ [Citations.] ‘An equally basic rule of statutory construction is, however, that courts are bound to give effect to statutes according to the usual, ordinary import of the language employed in framing them.’ [Citations.] Although a court may properly rely on extrinsic aids, it should first turn to the words of the statute to determine the intent of the Legislature. [Citations.] ‘If the words of the statute are clear, the court should not add to or alter them to accomplish a *637 purpose that does not appear on the face of the statute or from its legislative history.’ (*California Teachers Assn. v. San Diego Community College Dist.* (1981) 28 Cal.3d 692, 698 [170 Cal.Rptr. 817, 621 P.2d 856].)” (*Schmidt v. Foundation Health* (1995) 35 Cal.App.4th 1702, 1710–1711, 42 Cal.Rptr.2d 172.) “The construction of an administrative regulation and its application to a given set of facts are matters of law.” (*Ibid.*, quoting *Auchmoody v. 911 Emergency Services* (1989) 214 Cal.App.3d 1510, 1517, 263 Cal.Rptr. 278.)

In enacting the Alcoholic Beverage Control Act (Act) (§ 23000 et seq.), the Legislature declared the Act “involves in the highest degree the economic, social, and moral well-being and the safety of the State and of all its people.” (§ 23001.) The Act establishes the Department “to provide a governmental organization which will ensure a strict, honest, impartial, and uniform administration and enforcement of the liquor laws throughout the State.” (§ 23049.) To that end, section 23001 declares that “[a]ll provisions of this division shall be liberally construed for the accomplishment of these purposes.”

[8] [9] Rule 141(b)(4) provides that “[a] decoy shall answer truthfully any questions about his or her age.”

The Rule's guidance is clear and unambiguous. Minor decoys do not need to respond to *statements* of any kind nor do they need to respond truthfully to *questions* other than those concerning their ages. Thus, Rule 141 does not require minor decoys to correct mistakes articulated by licensed alcohol sellers. Instead, the minor decoys need to respond truthfully only to questions about their ages. In short, Rule 141 sets forth clear, unambiguous, and fair guidance for minor decoys to follow during the Department's operations. Consequently, the Department properly construed the **138 plain language of Rule 141 in determining the minor decoy in this case was not required to respond to the clerk's statement that might have related to the decoy's age.

The Appeals Board disagrees with the Department's plain-meaning interpretation of Rule 141, asserting the Rule is ambiguous and unfair. The Appeals Board argues that “the language of Rule 141[(b)(4)] is ambiguous, and decoys lack the expertise to make a fair decision about whether a clerk's words are a ‘question’ ‘about his or her age.’ ” The Appeals Board bases its argument on the assertion that “[t]he word ‘question’ is, especially when uttered vocally as opposed to being written, not free from doubt.” In support, the Appeals Board argues the ambiguity of the word “question” is demonstrated by the need for an evidentiary hearing to determine the nature of the store clerk's communication to the minor decoy. We reject the argument.

Courts have long resolved factual issues concerning whether a spoken communication constitutes a question that invited an answer. In *638 *Rhode Island v. Innis* (1980) 446 U.S. 291, 100 S.Ct. 1682, 64 L.Ed.2d 297, the United States Supreme Court articulated a test for determining when *Miranda* advisements must be given to a suspect that “come[s] into play whenever a person in custody is subjected to either express questioning or its functional equivalent.” (*Id.* at pp. 300–301, 100 S.Ct. 1682.) The test under *Rhode Island v. Innis* requires that police officers understand not only whether they are engaging in “express questioning,” but also when their words or actions “are reasonably likely to elicit an incriminating response from the suspect.” (*Id.* at p. 301, 100 S.Ct. 1682.) The United States Supreme Court's decision establishes the unproblematic nature of distinguishing between oral communications constituting questions (and even their functional equivalents) and statements not reasonably likely to elicit an incriminating

answer. Courts even require law enforcement officers to distinguish between suggestive and nonsuggestive questions. (*People v. Saracoglu* (2007) 152 Cal.App.4th 1584, 1590, 62 Cal.Rptr.3d 418.) Here, the determination required of minor decoys is more clear than the *Rhode Island v. Innis* test or the distinction between suggestive and nonsuggestive questions because subdivision (b)(4) of Rule 141 applies *only* to questions relating to age. “Question” is not an ambiguous term and does not lead to confusion in limiting spoken communications to those involving inquiries that contemplate answers.

[10] We also reject the Appeals Board's contention Rule 141 is ambiguous because “no definition is provided as to what ‘fairness’ means or how it is to be determined.” The lack of a definition of fairness, by itself, does not render Rule 141 ambiguous. (Cf. *Nava v. Mercury Cas. Co.* (2004) 118 Cal.App.4th 803, 805, 13 Cal.Rptr.3d 816 [lack of definition does not render a term ambiguous].) Contrary to the Appeals Board's contention, Rule 141 provides specific guidance regarding how to preserve fairness in minor decoy operations. Subdivision (b) of Rule 141 implements the goal of fairness by imposing five specific requirements for every minor decoy operation. Decoys must be under the age of 20; have the appearance of a person under 21; carry their own actual identification and present that identification upon request; truthfully answer any questions about their ages; and make face-to-face identifications of the persons who sold the alcoholic beverages. (Rule 141(b)(1)-(5).) Fairness under Rule 141 is assured by a set of five expressly defined safeguards, all of which must be fulfilled during a minor decoy operation. ****139** (*Acapulco Restaurants, supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.) Consequently, Rule 141's use of the word “fairness” does not render the rule ambiguous or confusing.

[11] [12] In support of the Appeals Board's argument Rule 141 is ambiguous regarding what constitutes fairness, it points to its earlier decisions in *7-Eleven, Inc./Johal Stores, Inc.* (2014) AB-9403 (*7-Eleven*), *Equilon Enterprises, LLC* (2002) AB-7845 (*Equilon*), *Lucky Stores, Inc.* (1999) AB-7227 (*Lucky*), *Southland Corp./Dandona* (***639** 1999) AB-7099 (*Southland*), and *Thrifty Payless, Inc.* (1998) AB-7050 (*Thrifty*). We may take judicial notice of decisions of the Appeals Board. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2005) 128 Cal.App.4th 1195, 1208, fn. 5, 27 Cal.Rptr.3d 766; accord *Reimel*

v. Alcoholic Beverage Control Appeals Bd. (1967) 254 Cal.App.2d 340, 62 Cal.Rptr. 54.) Thus, although we are not bound by the Appeals Board's decisions, we take judicial notice of the cited decisions and consider their reasoning for persuasive value.

Regarding agency decisions, the California Supreme Court has noted that “[w]here the meaning and legal effect of a statute is the issue, an agency's interpretation is one among several tools available to the court. Depending on the context, it may be helpful, enlightening, even convincing. It may sometimes be of little worth. [Citation.] Considered alone and apart from the context and circumstances that produce them, agency interpretations are not binding or necessarily even authoritative.” (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 7-8, 78 Cal.Rptr.2d 1, 960 P.2d 1031.) Based on our review, we conclude the Appeals Board's cited decisions vary in their persuasiveness and fidelity to Rule 141.

In *7-Eleven, supra*, AB-9403, the Appeals Board affirmed the suspension of an off-sale license based on sale to a minor decoy after the store clerk looked at the minor decoy's identification and stated, “oh, you are so young.” (*7-Eleven*, at pp. 2, 14.) In affirming the suspension, the Appeals Board concluded the minor decoy was not required to respond because the store clerk did not ask a question or indicate a mistake as to the minor decoy's age. The Appeals Board reasoned that “[t]he wor[d] ‘young’ is a subjective term, and gives no indication that the clerk has made a miscalculation and as a result believes the decoy to be over 21” years of age. (*Id.* at p. 12.) Under the reasoning of *7-Eleven*, the Appeals Board should have affirmed the license suspension in this case as well. Here, the administrative law judge found the store clerk did not ask a question of the minor decoy. And the store clerk did not clearly demonstrate confusion as to the minor's age in the statement, “I would never have guessed it, you must get asked a lot.” The minor decoy testified he thought the statement might mean either that “she thought I was older *or thought that I do it a lot*” Because the store clerk in this case made a statement akin to that in *7-Eleven*, the reasoning employed in *7-Eleven* should have led the Appeals Board to affirm the Department's decision.

We reject the reasoning contained in the remainder of the Appeals Board's earlier decisions because the reasoning in

each would require minor decoys to speak up to clarify any mistake about their ages even in the absence of a question. (*Equilon*, at p. 2 [concluding Rule 141 “was *640 violated when the decoy failed to respond to a statement by the clerk which implied that she was 21 years of age or older”], *Lucky*, at p. 4 [same where minor decoy did not respond to mistaken statement, “1978. You are 21”], and *Southland*, at pp. 6, 7 [same where decoy did not respond to statement, “You are 21”]. In each of these decisions, **140 the Appeals Board relied on the notion of fairness to craft a new requirement for Rule 141, namely the obligation of a minor decoy to respond to any indication of mistake regarding age even in the absence of a question. Rule 141, however, expressly requires minor decoys only to answer questions relating to their ages. (Rule 141(b)(4).) The Appeals Board lacks the power to add a new defense to Rule 141.

The Appeals Board's decision in *Thrifty*, *supra*, AB-7050 involved a reversal of the Board's decision based on the minor decoy's silent tendering of a driver license rather than answering the clerk's question about her age. (See *Thrifty*, at p. 6 [speculating about the minor decoy's motivation in offering her identification rather than answering about her age].) Unlike this case, *Thrifty* involved an actual question by the clerk about the minor decoy's age and is therefore inapposite in this case where the administrative law judge determined the clerk did not ask any questions. (*Id.* at pp. 5–6.) Consequently, we need not consider whether *Thrifty* was correctly decided in harmony with Rule 141.

Ultimately, we are not persuaded by the Appeals Board's prior decisions that Rule 141 is ambiguous in requiring decoys to answer truthfully only questions relating to their ages.

Next, the Appeals Board argues the principle of fairness upon which Rule 141 is founded imposes an affirmative duty on minor decoys to speak up in order to clarify any mistake regarding age articulated by the vendor. If the Department had wanted to provide license holders with a defense for mistakes about a minor decoy's age or based on a minor decoy's failure to respond to a statement by the clerk, the Department could have done so by including express language to that effect in Rule 141. However, as we explained above, the language of Rule 141 requires minor decoys to respond only to questions about their ages. We reject the Appeals Board's attempt to add a

new defense to Rule 141 that is not expressed in the rule. (*Acapulco Restaurants*, *supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

Acapulco Restaurants involved a minor decoy operation in which the Department did not comply with Rule 141's requirement the minor decoy make a face-to-face identification of the clerk who sold the alcoholic beverage. (67 Cal.App.4th at p. 577, 79 Cal.Rptr.2d 126; see also Rule 141(b)(5).) Despite the failure to follow this express requirement *641 of Rule 141, the Department imposed and the Appeals Board affirmed a 15-day license suspension on grounds a law enforcement officer witnessed the entire transaction. (*Acapulco Restaurants*, at p. 577, 79 Cal.Rptr.2d 126.) However, the *Acapulco Restaurants* court reversed, explaining, “[t]o ignore a rule and the defense that arises from law enforcement's failure to comply with that rule is not a matter of ‘interpretation.’ What the Department has done is to unilaterally decide that rule 141[](b)(5) applies in some situations but not others, a decision that exceeds the Department's power. By its refusal to apply rule 141[](b)(5) when a police officer is present at the time of the sale, the Department has crossed the line separating the interpretation of a word or phrase on one side to the legislation of a different rule on the other, thereby substituting its judgment for that of the rulemaking authority. It might as well have said that rule 141[](b)(5) applies on Mondays but not Thursdays.” (*Acapulco Restaurants*, *supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

[13] [14] The result in *Acapulco Restaurants* followed the well-established rule that “[a]n exception to a statute is to be narrowly construed. (Citation.) When a statute specifies an exception, no others **141 may be added under the guise of judicial construction. (Citations.)” (*Kirby v. Alcoholic Beverage Control Appeals Bd.* (1968) 267 Cal.App.2d 895, 898, 73 Cal.Rptr. 352, quoting *Lacabanne Properties, Inc. v. Department of Alcoholic Beverage Control* (1968) 261 Cal.App.2d 181, 189, 67 Cal.Rptr. 734.) Fairness does not require the new exception to be judicially grafted into Rule 141 to provide additional defenses that require a minor decoy to speak up in the absence of a question by the store clerk. As the California Supreme Court has noted, “licensees have a ready means of protecting themselves from liability by simply asking any purchasers who could possibly be minors to produce bona fide evidence of their age

and identity.” (*Provigo, supra*, 7 Cal.4th at p. 570, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

Likewise, we reject the argument made by CVS that the minor decoy's silence in response to the clerk's statement about his youthful appearance was “deceptive and misleading.” As this court has previously noted in a case involving a claim a governmental agency engaged in fraudulent concealment, “Courts uniformly distinguish between the misleading half-truth, or partial disclosure, and the case in which defendant says nothing at all. The general rule is that silence alone is not actionable.” (*Wiechmann Engineers v. State of California ex rel. Dept. Pub. Wks.* (1973) 31 Cal.App.3d 741, 751, 107 Cal.Rptr. 529.)

Here, the minor decoy did not say anything untrue. To the contrary, the minor decoy presented accurate information in the form of his driver license. Thus, the minor decoy did not engage in deceptive and misleading communication with the clerk. Notably, the California Supreme Court has rejected a claim the use of a “mature-looking” decoy constitutes an unfair practice by *642 the Department in a case in which a minor decoy “simply bought beer and wine, *without attempting to pressure or encourage the sales in any way.*” (*Provigo, supra*, 7 Cal.4th at p. 569, 28 Cal.Rptr.2d 638, 869 P.2d 1163, italics added.) The same reason applies here. The minor decoy's silence in this case did not involve any attempt to pressure or encourage the sale of an alcoholic beverage to him. The minor decoy's silence did not render the Department's operation unfair.

CVS's argument its clerk was deceived and misled by the minor decoy in this case is based on the same premise as that advanced by the Appeals Board, namely a minor decoy has a duty to speak up in response to a statement indicating a mistaken calculation of age. However, as we have explained, Rule 141 does not supply a defense based on a minor decoy's failure to respond to statements made by the clerk. Consequently, we conclude the Department properly rejected CVS's argument the minor decoy's silence rendered the operation unfair under Rule 141.

C.

Substantial Evidence Supports the Department's Decision

[15] As part of its argument Rule 141 is ambiguous, the Appeals Board asserts the minor decoy's testimony during the hearing was equally uncertain. Specifically, the Appeals Board asserts that “[t]he decoy's testimony is as ambiguous as [Rule 141], and certainly does not support the conclusion, reached by the Department, that the clerk's words were ‘[i]ndisputably a statement’ falling outside the Rule.” In light of the administrative law judge's factual finding, we disagree.

Viewed in the light most favorable to the Department's decision, we conclude substantial evidence supports the administrative law judge's decision. As the administrative law judge found, the minor decoy's **142 testimony was clear and credible. The administrative law judge also expressly found the testimony established the store clerk's communication to the minor decoy was a statement and not a question. Under section 23090.2, the Appeals Board lacks power to disregard the Department's factual findings, which includes findings made by the administrative law judge. (*Hasselbach v. Department of Alcoholic Beverage Control* (1959) 167 Cal.App.2d 662, 667, 334 P.2d 1058 [“The statement made in the opinion of the appeals board was not a finding of fact for that board is without power to make findings of fact”].) Accordingly, we reject the Appeals Board's argument the store clerk's statement might have been a question instead of a statement.

***643 DISPOSITION**

The decision of the Alcohol Beverage Control Appeals Board is annulled. The decision of the Department of Alcoholic Beverage Control is reinstated and the case is remanded to the Alcohol Beverage Control Appeals Board for further proceedings consistent with this opinion.

We concur:

BLEASE, Acting P.J.

RENNER, J.

All Citations

7 Cal.App.5th 628, 213 Cal.Rptr.3d 130, 17 Cal. Daily Op. Serv. 384, 2017 Daily Journal D.A.R. 402

Footnotes

- 1 Undesignated statutory references are to the Business and Professions Code.
- 2 The license is held by Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174.

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54 Cal.3d 326, 814 P.2d 1308, 285 Cal.Rptr. 66

FRANCES KINLAW et al., Plaintiffs and Appellants,

v.

THE STATE OF CALIFORNIA et
al., Defendants and Respondents.

No. S014349.

Supreme Court of California

Aug 30, 1991.

SUMMARY

Medically indigent adults and taxpayers brought an action pursuant to [Code Civ. Proc., § 526a](#), against the state, alleging that it had violated [Cal. Const., art. XIII B, § 6](#) (reimbursement of local governments for state-mandated new programs), by shifting its financial responsibility for the funding of health care for the poor onto the county without providing the necessary funding, and that as a result the state had evaded its constitutionally mandated spending limits. The trial court granted summary judgment for the State after concluding plaintiffs lacked standing to prosecute the action. (Superior Court of Alameda County, No. 632120-4, Henry Ramsey, Jr., and Demetrios P. Agretelis, Judges.) The Court of Appeal, First Dist., Div. Two, Nos. A041426 and A043500, reversed.

The Supreme Court reversed the judgment of the Court of Appeal, holding the administrative procedures established by the Legislature ([Gov. Code, § 17500](#) et seq.), which are available only to local agencies and school districts directly affected by a state mandate, were the exclusive means by which the state's obligations under [Cal. Const., art. XIII B, § 6](#), were to be determined and enforced. Accordingly, the court held plaintiffs lacked standing to prosecute the action. (Opinion by Baxter, J., with Lucas, C. J., Panelli, Kennard, and Arabian, JJ., concurring. Separate dissenting opinion by Broussard, J., with Mosk, J., concurring.)

HEADNOTES**Classified to California Digest of Official Reports**

(1)

State of California § 7--Actions--State-mandated Costs--Reimbursement-- Exclusive Statutory Remedy.

[Gov. Code, § 17500](#) et seq., creates an administrative forum for resolution of state mandate claims arising under [Cal. Const., art. XIII B, § 6](#), and establishes procedures which exist for the express purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid. It also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid ([Gov. Code, § 17612](#)). In view of the comprehensive nature of the legislative scheme, and from the expressed intent, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce [Cal. Const., art. XIII B, § 6](#).

(2)

State of California § 7--Actions--State-mandated Costs--Reimbursement-- Private Action to Enforce--Standing.

In an action by medically indigent adults and taxpayers seeking to enforce [Cal. Const., art. XIII B, § 6](#), for declaratory and injunctive relief requiring the state to reimburse the county for the cost of providing health care services to medically indigent adults who, prior to 1983, had been included in the state Medi-Cal program, the Court of Appeal erred in holding that the existence of an administrative remedy ([Gov. Code, § 17500](#) et seq.) by which affected local agencies could enforce their constitutional right under [art. XIII B, § 6](#) to reimbursement for the cost of state mandates did not bar the action. Because the right involved was given by the Constitution to local agencies and school districts, not individuals either as taxpayers or recipients of government benefits and services, the administrative remedy was adequate fully to implement the constitutional provision. The Legislature has the authority to establish procedures for the implementation of local agency rights under [art. XIII B, § 6](#); unless the exercise of a constitutional right is unduly restricted, a court must limit enforcement to the procedures established by the Legislature. Plaintiffs' interest, although pressing, was indirect and did not differ

from the interest of the public at large in the financial plight of local government. Relief by way of reinstatement to Medi-Cal pending further action by the state was not a remedy available under the statute, and thus was not one which a court may award.

[See [Cal.Jur.3d](#), *State of California*, § 78; 7 [Witkin](#), *Summary of Cal. Law* (9th ed. 1988) *Constitutional Law*, § 112.]

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BAXTER, J.

Plaintiffs, medically indigent adults and taxpayers, seek to enforce [section 6 of article XIII B](#) (hereafter, [section 6](#)) of the California Constitution through an action for declaratory and injunctive relief. They invoked the jurisdiction of the superior court as taxpayers pursuant to [Code of Civil Procedure section 526a](#) and as persons affected by the alleged failure of the state to comply with [section 6](#). The superior court granted summary judgment for defendants State of California and Director of the Department of Health Services, after concluding that plaintiffs lacked standing to prosecute the action. On appeal, the Court of Appeal held that plaintiffs have standing and that the action is not barred by the availability of administrative remedies.

We reverse. The administrative procedures established by the Legislature, which are available only to local agencies and school districts directly affected by a state mandate, are the exclusive means by which the state's

obligations under [section 6](#) are to be determined and enforced. Plaintiffs therefore lack standing.

I State Mandates

[Section 6](#), adopted on November 6, 1979, as part of an initiative measure imposing spending limits on state and local government, also imposes on the state an obligation to reimburse local agencies for the cost of most programs and services which they must provide pursuant to a state mandate if the local agencies were not under a preexisting duty to fund the activity. It provides: *329

“Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service, except that the Legislature may, but need not, provide such subvention of funds for the following mandates:

“(a) Legislative mandates requested by the local agency affected;

“(b) Legislation defining a new crime or changing an existing definition of a crime; or

“(c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.”

A complementary provision, [section 3 of article XIII B](#), provides for a shift from the state to the local agency of a portion of the spending or “appropriation” limit of the state when responsibility for funding an activity is shifted to a local agency:

“The appropriations limit for any fiscal year ... shall be adjusted as follows: [¶] (a) In the event that the financial responsibility of providing services is transferred, in whole or in part, ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriations limit of the transferee entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount.”

II Plaintiffs' Action

The underlying issue in this action is whether the state is obligated to reimburse the County of Alameda, and shift to Alameda County a concomitant portion of the state's spending limit, for the cost of providing health care services to medically indigent adults who prior to 1983 had been included in the state Medi-Cal program. Assembly Bill No. 799 (1981-1982 Reg. Sess.) (AB 799) (Stats. 1982, ch. 328, p. 1568) removed medically indigent adults from Medi-Cal effective January 1, 1983. At the time [section 6](#) was adopted, the state was funding Medi-Cal coverage for these persons without requiring any county financial contribution.

Plaintiffs initiated this action in the Alameda County Superior Court. They sought relief on their own behalf and on behalf of a class of similarly [*330](#) situated medically indigent adult residents of Alameda County. The only named defendants were the State of California, the Director of the Department of Health Services, and the County of Alameda.

In the complaint for declaratory and injunctive relief, plaintiffs sought an injunction compelling the state to restore Medi-Cal eligibility to medically indigent adults or to reimburse the County of Alameda for the cost of providing health care to those persons. They also prayed for a declaration that the transfer of responsibility from the state-financed Medi-Cal program to the counties without adequate reimbursement violated the California Constitution.¹

At the time plaintiffs initiated their action neither Alameda County, nor any other county or local agency, had filed a reimbursement claim with the Commission on State Mandates (Commission).²

Whether viewed as an action seeking restoration of Medi-Cal benefits, one to compel state reimbursement of county costs, or one for declaratory relief, therefore, the action required a determination that the enactment of AB 799 created a state mandate within the contemplation of [section 6](#). Only upon resolution of that issue favorably to plaintiffs would the state have an obligation to reimburse the county for its increased expense and shift a portion of its appropriation limit, or to reinstate Medi-Cal benefits for plaintiffs and the class they seek to represent.

The gravamen of the action is, therefore, enforcement of [section 6](#).³ [*331](#)

III Enforcement of Article XIII B, Section 6

In 1984, almost five years after the adoption of [article XIII B](#), the Legislature enacted comprehensive administrative procedures for resolution of claims arising out of [section 6](#). (§ 17500.) The Legislature did so because the absence of a uniform procedure had resulted in inconsistent rulings on the existence of state mandates, unnecessary litigation, reimbursement delays, and, apparently, resultant uncertainties in accommodating reimbursement requirements in the budgetary process. The necessity for the legislation was explained in [section 17500](#):

“The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state-mandated local programs has not provided for the effective determination of the state's responsibilities under [Section 6 of Article XIII B of the California Constitution](#). The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary and, therefore, in order to relieve unnecessary congestion of the judicial system, *it is necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs.*” (Italics added.)

In part 7 of division 4 of title 2 of the Government Code, “State-Mandated Costs,” which commences with [section 17500](#), the Legislature created the Commission (§ 17525), to adjudicate disputes over the existence of a state-mandated program (§§ 17551, 17557) and to adopt procedures for submission and adjudication of reimbursement claims (§ 17553). The five-member Commission includes the Controller, the Treasurer, the Director of Finance, the Director of the Office of Planning and Research, and a public member experienced in public finance. (§ 17525.)

The legislation establishes a test-claim procedure to expeditiously resolve disputes affecting multiple agencies (§ 17554),⁴ establishes the method of [*332](#) payment of

claims (§§ 17558, 17561), and creates reporting procedures which enable the Legislature to budget adequate funds to meet the expense of state mandates (§§ 17562, 17600, 17612, subd. (a).)

Pursuant to procedures which the Commission was authorized to establish (§ 17553), local agencies⁵ and school districts⁶ are to file claims for reimbursement of state-mandated costs with the Commission (§§ 17551, 17560), and reimbursement is to be provided only through this statutory procedure. (§§ 17550, 17552.)

The first reimbursement claim filed which alleges that a state mandate has been created under a statute or executive order is treated as a “test claim.” (§ 17521.) A public hearing must be held promptly on any test claim. At the hearing on a test claim or on any other reimbursement claim, evidence may be presented not only by the claimant, but also by the Department of Finance and any other department or agency potentially affected by the claim. (§ 17553.) Any interested organization or individual may participate in the hearing. (§ 17555.)

A local agency filing a test claim need not first expend sums to comply with the alleged state mandate, but may base its claim on estimated costs. (§ 17555.) The Commission must determine both whether a state mandate exists and, if so, the amount to be reimbursed to local agencies and school districts, adopting “parameters and guidelines” for reimbursement of any claims relating to that statute or executive order. (§ 17557.) Procedures for determining whether local agencies have achieved statutorily authorized cost savings and for offsetting these savings against reimbursements are also provided. (§ 17620 et seq.) Finally, judicial review of the Commission decision is available through petition for writ of mandate filed pursuant to [Code of Civil Procedure section 1094.5](#). (§ 17559.)

The legislative scheme is not limited to establishing the claims procedure, however. It also contemplates reporting to the Legislature and to departments and agencies of the state which have responsibilities related to funding state mandates, budget planning, and payment. The parameters and guidelines adopted by the Commission must be submitted to the Controller, who is to pay subsequent claims arising out of the mandate. (§ 17558.) Executive orders mandating costs are to be accompanied by an appropriations *333 bill to cover the costs if the costs

are not included in the budget bill, and in subsequent years the costs must be included in the budget bill. (§ 17561, subds. (a) & (b).) Regular review of the costs is to be made by the Legislative Analyst, who must report to the Legislature and recommend whether the mandate should be continued. (§ 17562.) The Commission is also required to make semiannual reports to the Legislature of the number of mandates found and the estimated reimbursement cost to the state. (§ 17600.) The Legislature must then adopt a “local government claims bill.” If that bill does not include funding for a state mandate, an affected local agency or school district may seek a declaration from the superior court for the County of Sacramento that the mandate is unenforceable, and an injunction against enforcement. (§ 17612.)

Additional procedures, enacted in 1985, create a system of state-mandate apportionments to fund reimbursement. (§ 17615 et seq.)

(11) It is apparent from the comprehensive nature of this legislative scheme, and from the Legislature's expressed intent, that the exclusive remedy for a claimed violation of [section 6](#) lies in these procedures. The statutes create an administrative forum for resolution of state mandate claims, and establishes procedures which exist for the express purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid (§ 17612).

The legislative intent is clearly stated in [section 17500](#): “It is the intent of the Legislature in enacting this part to provide for the implementation of [Section 6 of Article XIII B of the California Constitution](#) and to consolidate the procedures for reimbursement of statutes specified in the Revenue and Taxation Code with those identified in the Constitution. ...” And section 17550 states: “Reimbursement of local agencies and school districts for costs mandated by the state shall be provided pursuant to this chapter.”

Finally, section 17552 provides: “This chapter shall provide *the sole and exclusive procedure* by which a local agency or school district may claim reimbursement for costs mandated by the state as required by [Section 6 of](#)

Article XIII B of the California Constitution.” (Italics added.)

In short, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce [section 6](#). *334

IV Exclusivity

(2) Plaintiffs argued, and the Court of Appeal agreed, that the existence of an administrative remedy by which affected local agencies could enforce their right under [section 6](#) to reimbursement for the cost of state mandates did not bar this action because the administrative remedy is available only to local agencies and school districts.

The Court of Appeal recognized that the decision of the County of Alameda, which had not filed a claim for reimbursement at the time the complaint was filed, was a discretionary decision which plaintiffs could not challenge. (*Dunn v. Long Beach L. & W. Co.* (1896) 114 Cal. 605, 609, 610-611 [46 P. 607]; *Silver v. Watson* (1972) 26 Cal.App.3d 905, 909 [103 Cal.Rptr. 576]; *Whitson v. City of Long Beach* (1962) 200 Cal.App.2d 486, 506 [19 Cal.Rptr. 668]; *Elliott v. Superior Court* (1960) 180 Cal.App.2d 894, 897 [5 Cal.Rptr. 116].) The court concluded, however, that public policy and practical necessity required that plaintiffs have a remedy for enforcement of [section 6](#) independent of the statutory procedure.

The right involved, however, is a right given by the Constitution to local agencies, not individuals either as taxpayers or recipients of government benefits and services. [Section 6](#) provides that the “state shall provide a subvention of funds to reimburse ... local governments ...” (Italics added.) The administrative remedy created by the Legislature is adequate to fully implement [section 6](#). That Alameda County did not file a reimbursement claim does not establish that the enforcement remedy is inadequate. Any of the 58 counties was free to file a claim, and other counties did so. The test claim is now before the Court of Appeal. The administrative procedure has operated as intended.

The Legislature has the authority to establish procedures for the implementation of local agency rights under [section 6](#). Unless the exercise of a constitutional right is unduly restricted, the court must limit enforcement to the procedures established by the Legislature. (*People v.*

Western Air Lines, Inc. (1954) 42 Cal.2d 621, 637 [268 P.2d 723]; *Chesney v. Byram* (1940) 15 Cal.2d 460, 463 [101 P.2d 1106]; *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62, 75 [222 Cal.Rptr. 750].)

Plaintiffs' argument that they must be permitted to enforce [section 6](#) as individuals because their right to adequate health care services has been compromised by the failure of the state to reimburse the county for the cost *335 of services to medically indigent adults is unpersuasive. Plaintiffs' interest, although pressing, is indirect and does not differ from the interest of the public at large in the financial plight of local government. Although the basis for the claim that the state must reimburse the county for its costs of providing the care that was formerly available to plaintiffs under Medi-Cal is that AB 799 created a state mandate, plaintiffs have no right to have any reimbursement expended for health care services of any kind. Nothing in [article XIII B](#) or other provision of law controls the county's expenditure of the funds plaintiffs claim must be paid to the county. To the contrary, [section 17563](#) gives the local agency complete discretion in the expenditure of funds received pursuant to [section 6](#), providing: “Any funds received by a local agency or school district pursuant to the provisions of this chapter may be used for any public purpose.”

The relief plaintiffs seek in their prayer for state reimbursement of county expenses is, in the end, a reallocation of general revenues between the state and the county. Neither public policy nor practical necessity compels creation of a judicial remedy by which individuals may enforce the right of the county to such revenues. The Legislature has established a procedure by which the county may claim any revenues to which it believes it is entitled under [section 6](#). That test-claim statute expressly provides that not only the claimant, but also “any other interested organization or individual may participate” in the hearing before the Commission (§ 17555) at which the right to reimbursement of the costs of such mandate is to be determined. Procedures for receiving any claims must “provide for presentation of evidence by the claimant, the Department of Finance and any other affected department or agency, and any other interested person.” (§ 17553. Italics added.) Neither the county nor an interested individual is without an opportunity to be heard on these questions. These procedures are both adequate and exclusive.⁷

The alternative relief plaintiffs seek-reinstatement to Medi-Cal pending further action by the state-is not a remedy available under the statute, and thus is not one which this court may award. The remedy for the failure to fund a program is a declaration that the mandate is unenforceable. That relief is available only after the Commission has determined that a mandate exists *336 and the Legislature has failed to include the cost in a local government claims bill, and only on petition by the county. (§ 17612.)⁸

Moreover, the judicial remedy approved by the Court of Appeal permits resolution of the issues raised in a state mandate claim without the participation of those officers and individuals the Legislature deems necessary to a full and fair exposition and resolution of the issues. Neither the Controller nor the Director of Finance was named a defendant in this action. The Treasurer and the Director of the Office of Planning and Research did not participate. All of these officers would have been involved in determining the question as members of the Commission, as would the public member of the Commission. The judicial procedures were not equivalent to the public hearing required on test claims before the Commission by section 17555. Therefore, other affected departments, organizations, and individuals had no opportunity to be heard.⁹

Finally, since a determination that a state mandate has been created in a judicial proceeding rather than one before the Commission does not trigger the procedures for creating parameters and guidelines for payment of claims, or for inclusion of estimated costs in the state budget, there is no source of funds available for compliance with the judicial decision other than the appropriations for the Department of Health Services. Payment from those funds can only be at the expense of another program which the department is obligated to fund. No public policy supports, let alone requires, this result.

The superior court acted properly in dismissing this action.

The judgment of the Court of Appeal is reversed.

Lucas, C. J., Panelli, J., Kennard, J., and Arabian, J., concurred.

BROUSSARD, J.

I dissent. For nine years the Legislature has defied the mandate of article XIII B of the California Constitution (hereafter article XIII B). Having transferred responsibility for the care of medically indigent adults (MIA's) to county governments, the Legislature has failed to provide the counties with sufficient money to meet this responsibility, yet the *337 Legislature computes its own appropriations limit as if it fully funded the program. The majority, however, declines to remedy this violation because, it says, the persons most directly harmed by the violation-the medically indigent who are denied adequate health care-have no standing to raise the matter. I disagree, and will demonstrate that (1) plaintiffs have standing as citizens to seek a declaratory judgment to determine whether the state is complying with its constitutional duty under article XIII B; (2) the creation of an administrative remedy whereby counties and local districts can enforce article XIII B does not deprive the citizenry of its own independent right to enforce that provision; and (3) even if plaintiffs lacked standing, our recent decision in *Dix v. Superior Court* (1991) 53 Cal.3d 442 [279 Cal.Rptr. 834, 807 P.2d 1063] permits us to reach and resolve any significant issue decided by the Court of Appeal and fully briefed and argued here. I conclude that we should reach the merits of the appeal.

On the merits, I conclude that the state has not complied with its constitutional obligation under article XIII B. To prevent the state from avoiding the spending limits imposed by article XIII B, section 6 of that article prohibits the state from transferring previously state-financed programs to local governments without providing sufficient funds to meet those burdens. In 1982, however, the state excluded the medically indigent from its Medi-Cal program, thus shifting the responsibility for such care to the counties. Subvention funds provided by the state were inadequate to reimburse the counties for this responsibility, and became less adequate every year. At the same time, the state continued to compute its spending limit as if it fully financed the entire program. The result is exactly what article XIII B was intended to prevent: the state enjoys a falsely inflated spending limit; the county is compelled to assume a burden it cannot afford; and the medically indigent receive inadequate health care.

I. Facts and Procedural History

Plaintiffs-citizens, taxpayers, and persons in need of medical care-allege that the state has shifted its financial responsibility for the funding of health care for MIA's to the counties without providing the necessary funding and without any agreement transferring appropriation limits, and that as a result the state is violating [article XIII B](#). Plaintiffs further allege they and the class they claim to represent cannot, consequently, obtain adequate health care from the County of Alameda, which lacks the state funding to provide it. The county, although nominally a defendant, aligned [*338](#) itself with plaintiffs. It admits the inadequacy of its program to provide medical care for MIA's but blames the absence of state subvention funds.¹

At hearings below, plaintiffs presented uncontradicted evidence regarding the enormous impact of these statutory changes upon the finances and population of Alameda County. That county now spends about \$40 million annually on health care for MIA's, of which the state reimburses about half. Thus, since [article XIII B](#) became effective, Alameda County's obligation for the health care of MIA's has risen from zero to more than \$20 million per year. The county has inadequate funds to discharge its new obligation for the health care of MIA's; as a result, according to the Court of Appeal, uncontested evidence from medical experts presented below shows that, "The delivery of health care to the indigent in Alameda County is in a state of shambles; the crisis cannot be overstated" "Because of inadequate state funding, some Alameda County residents are dying, and many others are suffering serious diseases and disabilities, because they cannot obtain adequate access to the medical care they need" "The system is clogged to the breaking point. ... All community clinics ... are turning away patients." "The funding received by the county from the state for MIAs does not approach the actual cost of providing health care to the MIAs. As a consequence, inadequate resources available to county health services jeopardize the lives and health of thousands of people"

The trial court acknowledged that plaintiffs had shown irreparable injury, but denied their request for a preliminary injunction on the ground that they could not prevail in the action. It then granted the state's motion for summary judgment. Plaintiffs appealed from both decisions of the trial court.

The Court of Appeal consolidated the two appeals and reversed the rulings below. It concluded that plaintiffs had

standing to bring this action to enforce the constitutional spending limit of [article XIII B](#), and that the action is not barred by the existence of administrative remedies available to counties. It then held that the shift of a portion of the cost of medical indigent care by the state to Alameda County constituted a state-mandated new program under the provisions of [article XIII B](#), which triggered that article's provisions requiring a subvention of funds by the state to reimburse Alameda [*339](#) County for the costs of such program it was required to assume. The judgments denying a preliminary injunction and granting summary judgment for defendants were reversed. We granted review.

II. Standing

A. Plaintiffs have standing to bring an action for declaratory relief to determine whether the state is complying with [article XIII B](#).

Plaintiffs first claim standing as taxpayers under [Code of Civil Procedure section 526a](#), which provides that: "An action to obtain a judgment, restraining and preventing any illegal expenditure of, waste of, or injury to, the estate, funds, or other property of a county ..., may be maintained against any officer thereof, or any agent, or other person, acting in its behalf, either by a citizen resident therein, or by a corporation, who is assessed for and is liable to pay, or, within one year before the commencement of the action, has paid, a tax therein. ..." As in [Common Cause v. Board of Supervisors](#) (1989) 49 Cal.3d 432, 439 [261 Cal.Rptr. 574, 777 P.2d 610], however, it is "unnecessary to reach the question whether plaintiffs have standing to seek an injunction under [Code of Civil Procedure section 526a](#), because there is an independent basis for permitting them to proceed." Plaintiffs here seek a declaratory judgment that the transfer of responsibility for MIA's from the state to the counties without adequate reimbursement violates [article XIII B](#). A declaratory judgment that the state has breached its duty is essentially equivalent to an action in mandate to compel the state to perform its duty. (See [California Assn. of Psychology Providers v. Rank](#) (1990) 51 Cal.3d 1, 9 [270 Cal.Rptr. 796, 793 P.2d 2], which said that a declaratory judgment establishing that the state has a duty to act provides relief equivalent to mandamus, and makes issuance of the writ unnecessary.) Plaintiffs further seek a mandatory injunction requiring that the state pay the health costs of MIA's under the Medi-Cal program until the state

meets its obligations under [article XIII B](#). The majority similarly characterize plaintiffs' action as one comparable to mandamus brought to enforce [section 6 of article XIII B](#).

We should therefore look for guidance to cases that discuss the standing of a party seeking a writ of mandate to compel a public official to perform his or her duty.² Such an action may be brought by any person “beneficially interested” in the issuance of the writ. ([Code Civ. Proc., § 1086](#).) In *Carsten* *340 v. *Psychology Examining Com.* (1980) 27 Cal.3d 793, 796 [166 Cal.Rptr. 844, 614 P.2d 276], we explained that the “requirement that a petitioner be 'beneficially interested' has been generally interpreted to mean that one may obtain the writ only if the person has some special interest to be served or some particular right to be preserved or protected over and above the interest held in common with the public at large.” We quoted from Professor Davis, who said, “One who is in fact adversely affected by governmental action should have standing to challenge that action if it is judicially reviewable.” (Pp. 796-797, quoting 3 Davis, *Administrative Law Treatise* (1958) p. 291.) Cases applying this standard include *Stocks v. City of Irvine* (1981) 114 Cal.App.3d 520 [170 Cal.Rptr. 724], which held that low- income residents of Los Angeles had standing to challenge exclusionary zoning laws of suburban communities which prevented the plaintiffs from moving there; *Taschner v. City Council*, *supra*, 31 Cal.App.3d 48, which held that a property owner has standing to challenge an ordinance which may limit development of the owner's property; and *Felt v. Waughop* (1924) 193 Cal. 498 [225 P. 862], which held that a city voter has standing to compel the city clerk to certify a correct list of candidates for municipal office. Other cases illustrate the limitation on standing: *Carsten v. Psychology Examining Com.*, *supra*, 27 Cal.3d 793, held that a member of the committee who was neither seeking a license nor in danger of losing one had no standing to challenge a change in the method of computing the passing score on the licensing examination; *Parker v. Bowron* (1953) 40 Cal.2d 344 [254 P.2d 6] held that a union official who was neither a city employee nor a city resident had no standing to compel a city to follow a prevailing wage ordinance; and *Dunbar v. Governing Board* (1969) 275 Cal.App.2d 14 [79 Cal.Rptr. 662] held that a member of a student organization had standing to challenge a college district's rule barring a speaker from campus, but persons who merely planned to hear him speak did not.

No one questions that plaintiffs are affected by the lack of funds to provide care for MIA's. Plaintiffs, except for plaintiff Rabinowitz, are not merely citizens and taxpayers; they are medically indigent persons living in Alameda County who have been and will be deprived of proper medical care if funding of MIA programs is inadequate. Like the other plaintiffs here, *341 plaintiff Kinlaw, a 60-year-old woman with diabetes and hypertension, has no health insurance. Plaintiff Spier has a chronic back condition; inadequate funding has prevented him from obtaining necessary diagnostic procedures and physiotherapy. Plaintiff Tsosie requires medication for allergies and arthritis, and claims that because of inadequate funding she cannot obtain proper treatment. Plaintiff King, an epileptic, says she was unable to obtain medication from county clinics, suffered seizures, and had to go to a hospital. Plaintiff “Doe” asserts that when he tried to obtain treatment for AIDS-related symptoms, he had to wait four to five hours for an appointment and each time was seen by a different doctor. All of these are people personally dependent upon the quality of care of Alameda County's MIA program; most have experienced inadequate care because the program was underfunded, and all can anticipate future deficiencies in care if the state continues its refusal to fund the program fully.

The majority, however, argues that the county has no duty to use additional subvention funds for the care of MIA's because under [Government Code section 17563](#) “[a]ny funds received by a local agency ... pursuant to the provisions of this chapter may be used for any public purpose.” Since the county may use the funds for other purposes, it concludes that MIA's have no special interest in the subvention.³

This argument would be sound if the county were already meeting its obligations to MIA's under [Welfare and Institutions Code section 17000](#). If that were the case, the county could use the subvention funds as it chose, and plaintiffs would have no more interest in the matter than any other county resident or taxpayer. But such is not the case at bar. Plaintiffs here allege that the county is not complying with its duty, mandated by [Welfare and Institutions Code section 17000](#), to provide health care for the medically indigent; the county admits its failure but pleads lack of funds. Once the county receives adequate funds, it must perform its statutory duty under [section 17000 of the Welfare and Institutions Code](#). If it refused, an action in mandamus would lie to compel performance.

(See *Mooney v. Pickett* (1971) 4 Cal.3d 669 [94 Cal.Rptr. 279, 483 P.2d 1231].) In fact, the county has made clear throughout this litigation that it would use the subvention funds to provide care for MIA's. The majority's conclusion that plaintiffs lack a special, beneficial interest in the state's compliance with [article XIII B](#) ignores the practical realities of health care funding.

Moreover, we have recognized an exception to the rule that a plaintiff must be beneficially interested. "Where the question is one of public right *342 and the object of the mandamus is to procure the enforcement of a public duty, the relator need not show that he has any legal or special interest in the result, since it is sufficient that he is interested as a citizen in having the laws executed and the duty in question enforced." (*Bd. of Soc. Welfare v. County of L. A.* (1945) 27 Cal.2d 98, 100-101 [162 P.2d 627].) We explained in *Green v. Obledo* (1981) 29 Cal.3d 126, 144 [172 Cal.Rptr. 206, 624 P.2d 256], that this "exception promotes the policy of guaranteeing citizens the opportunity to ensure that no governmental body impairs or defeats the purpose of legislation establishing a public right. ... It has often been invoked by California courts. [Citations.]"

Green v. Obledo presents a close analogy to the present case. Plaintiffs there filed suit to challenge whether a state welfare regulation limiting deductibility of work-related expenses in determining eligibility for aid to families with dependent children (AFDC) assistance complied with federal requirements. Defendants claimed that plaintiffs were personally affected only by a portion of the regulation, and had no standing to challenge the balance of the regulation. We replied that "[t]here can be no question that the proper calculation of AFDC benefits is a matter of public right [citation], and plaintiffs herein are certainly citizens seeking to procure the enforcement of a public duty. [Citation.] It follows that plaintiffs have standing to seek a writ of mandate commanding defendants to cease enforcing [the regulation] in its entirety." (29 Cal.3d at p. 145.)

We again invoked the exception to the requirement for a beneficial interest in *Common Cause v. Board of Supervisors*, *supra*, 49 Cal.3d 432. Plaintiffs in that case sought to compel the county to deputize employees to register voters. We quoted *Green v. Obledo*, *supra*, 29 Cal.3d 126, 144, and concluded that "[t]he question in this case involves a public right to voter outreach

programs, and plaintiffs have standing as citizens to seek its vindication." (49 Cal.3d at p. 439.) We should reach the same conclusion here.

B. *Government Code sections 17500-17630 do not create an exclusive remedy which bars citizen-plaintiffs from enforcing article XIII B.*

Four years after the enactment of [article XIII B](#), the Legislature enacted [Government Code sections 17500 through 17630](#) to implement [article XIII B, section 6](#). These statutes create a quasi-judicial body called the Commission on State Mandates, consisting of the state Controller, state Treasurer, state Director of Finance, state Director of the Office of Planning and Research, and one public member. The commission has authority to "hear and decide upon [any] claim" by a local government that it "is entitled to be reimbursed by the state" for costs under [article XIII B](#). (*Gov. Code*, § 17551, *343 subd. (a).) Its decisions are subject to review by an action for administrative mandamus in the superior court. (See *Gov. Code*, § 17559.)

The majority maintains that a proceeding before the Commission on State Mandates is the exclusive means for enforcement of [article XIII B](#), and since that remedy is expressly limited to claims by local agencies or school districts (*Gov. Code*, § 17552), plaintiffs lack standing to enforce the constitutional provision.⁴ I disagree, for two reasons.

First, [Government Code section 17552](#) expressly addressed the question of exclusivity of remedy, and provided that "[t]his chapter shall provide the sole and exclusive procedure by which *a local agency or school district* may claim reimbursement for costs mandated by the state as required by [Section 6 of Article XIII B of the California Constitution](#)." (Italics added.) The Legislature was aware that local agencies and school districts were not the only parties concerned with state mandates, for in [Government Code section 17555](#) it provided that "any other interested organization or individual may participate" in the commission hearing. Under these circumstances the Legislature's choice of words—"the sole and exclusive procedure by which a local agency or school district may claim reimbursement"—limits the procedural rights of those claimants only, and does not affect rights of other persons. *Expressio unius est exclusio alterius*—"the expression of certain things in a

statute necessarily involves exclusion of other things not expressed.” (*Henderson v. Mann Theatres Corp.* (1976) 65 Cal.App.3d 397, 403 [135 Cal.Rptr. 266].)

The case is similar in this respect to *Common Cause v. Board of Supervisors*, *supra*, 49 Cal.3d 432. Here defendants contend that the counties' right of action under *Government Code* sections 17551-17552 impliedly excludes *344 any citizen's remedy; in *Common Cause* defendants claimed the Attorney General's right of action under *Elections Code* section 304 impliedly excluded any citizen's remedy. We replied that “the plain language of *section 304* contains no limitation on the right of private citizens to sue to enforce the section. To infer such a limitation would contradict our long-standing approval of citizen actions to require governmental officials to follow the law, expressed in our expansive interpretation of taxpayer standing [citations], and our recognition of a 'public interest' exception to the requirement that a petitioner for writ of mandate have a personal beneficial interest in the proceedings [citations].” (49 Cal.3d at p. 440, fn. omitted.) Likewise in this case the plain language of *Government Code* sections 17551-17552 contain no limitation on the right of private citizens, and to infer such a right would contradict our long-standing approval of citizen actions to enforce public duties.

The United States Supreme Court reached a similar conclusion in *Rosado v. Wyman* (1970) 397 U.S. 397 [25 L.Ed.2d 442, 90 S.Ct. 1207]. In that case New York welfare recipients sought a ruling that New York had violated federal law by failing to make cost-of-living adjustments to welfare grants. The state replied that the statute giving the Department of Health, Education and Welfare authority to cut off federal funds to noncomplying states constituted an exclusive remedy. The court rejected the contention, saying that “[w]e are most reluctant to assume Congress has closed the avenue of effective judicial review to those individuals most directly affected by the administration of its program.” (P. 420 [25 L.Ed.2d at p. 460].) The principle is clear: the persons actually harmed by illegal state action, not only some administrator who has no personal stake in the matter, should have standing to challenge that action.

Second, *article XIII B* was enacted to protect taxpayers, not governments. *Sections 1 and 2 of article XIII B* establish strict limits on state and local expenditures, and require the refund of all taxes collected in excess of those

limits. *Section 6 of article XIII B* prevents the state from evading those limits and burdening county taxpayers by transferring financial responsibility for a program to a county, yet counting the cost of that program toward the limit on state expenditures.

These provisions demonstrate a profound distrust of government and a disdain for excessive government spending. An exclusive remedy under which only governments can enforce *article XIII B*, and the taxpayer-citizen can appear only if a government has first instituted proceedings, is inconsistent with the ethos that led to *article XIII B*. The drafters of *article XIII B* and the voters who enacted it would not accept that the state Legislature—the principal body regulated by the article—could establish a procedure *345 under which the only way the article can be enforced is for local governmental bodies to initiate proceedings before a commission composed largely of state financial officials.

One obvious reason is that in the never-ending attempts of state and local government to obtain a larger proportionate share of available tax revenues, the state has the power to coerce local governments into foregoing their rights to enforce *article XIII B*. An example is the Brown-Presley Trial Court Funding Act (*Gov. Code*, § 77000 et seq.), which provides that the county's acceptance of funds for court financing may, in the discretion of the Governor, be deemed a waiver of the counties' rights to proceed before the commission on all claims for reimbursement for state-mandated local programs which existed and were not filed prior to passage of the trial funding legislation.⁵ The ability of state government by financial threat or inducement to persuade counties to waive their right of action before the commission renders the counties' right of action inadequate to protect the public interest in the enforcement of *article XIII B*.

The facts of the present litigation also demonstrate the inadequacy of the commission remedy. The state began transferring financial responsibility for MIA's to the counties in 1982. Six years later no county had brought a proceeding before the commission. After the present suit was filed, two counties filed claims for 70 percent reimbursement. Now, nine years after the 1982 legislation, the counties' claims are pending before the Court of Appeal. After that court acts, and we decide whether to review its decision, the matter may still have to go back to the commission for hearings to *346 determine

the amount of the mandate—which is itself an appealable order. When an issue involves the life and health of thousands, a procedure which permits this kind of delay is not an adequate remedy.

In sum, effective, efficient enforcement of [article XIII B](#) requires that standing to enforce that measure be given to those harmed by its violation—in this case, the medically indigent—and not be vested exclusively in local officials who have no personal interest at stake and are subject to financial and political pressure to overlook violations.

C. Even if plaintiffs lack standing this court should nevertheless address and resolve the merits of the appeal.

Although ordinarily a court will not decide the merits of a controversy if the plaintiffs lack standing (see [McKinny v. Board of Trustees](#) (1982) 31 Cal.3d 79, 90 [181 Cal.Rptr. 549, 642 P.2d 460]), we recognized an exception to this rule in our recent decision in [Dix v. Superior Court](#), *supra*, 53 Cal.3d 442 (hereafter *Dix*). In *Dix*, the victim of a crime sought to challenge the trial court's decision to recall a sentence under [Penal Code section 1170](#). We held that only the prosecutor, not the victim of the crime, had standing to raise that issue. We nevertheless went on to consider and decide questions raised by the victim concerning the trial court's authority to recall a sentence under [Penal Code section 1170](#), subdivision (d). We explained that the sentencing issues “are significant. The case is fully briefed and all parties apparently seek a decision on the merits. Under such circumstances, we deem it appropriate to address [the victim's] sentencing arguments for the guidance of the lower courts. Our discretion to do so under analogous circumstances is well settled. [Citing cases explaining when an appellate court can decide an issue despite mootness.]” (53 Cal.3d at p. 454.) In footnote we added that “Under article VI, section 12, subdivision (b) of the California Constitution ..., we have jurisdiction to 'review the *decision of a Court of Appeal* in any cause.' (Italics added.) Here the Court of Appeal's decision addressed two issues—standing and merits. Nothing in article VI, section 12(b) suggests that, having rejected the Court of Appeal's conclusion on the preliminary issue of standing, we are foreclosed from 'review [ing]' the second subject addressed and resolved in its decision.” (Pp. 454-455, fn. 8.)

I see no grounds on which to distinguish *Dix*. The present case is also one in which the Court of Appeal decision addressed both standing and merits. It is fully briefed.

Plaintiffs and the county seek a decision on the merits. While the state does not seek a decision on the merits in this proceeding, its appeal of the superior court decision in the mandamus proceeding brought by the County of Los Angeles (see maj. opn., *ante*, p. 330, fn. 2) shows that it is not opposed to an appellate decision on the merits. *347

The majority, however, notes that various state officials—the Controller, the Director of Finance, the Treasurer, and the Director of the Office of Planning and Research—did not participate in this litigation. Then in a footnote, the majority suggests that this is the reason they do not follow the *Dix* decision. (Maj. opn., *ante*, p. 336, fn. 9.) In my view, this explanation is insufficient. The present action is one for declaratory relief against the state. It is not necessary that plaintiffs also sue particular state officials. (The state has never claimed that such officials were necessary parties.) I do not believe we should refuse to reach the merits of this appeal because of the nonparticipation of persons who, if they sought to participate, would be here merely as amici curiae.⁶

The case before us raises no issues of departmental policy. It presents solely an issue of law which this court is competent to decide on the briefs and arguments presented. That issue is one of great significance, far more significant than any raised in *Dix*. Judges rarely recall sentencing under [Penal Code section 1170](#), subdivision (d); when they do, it generally affects only the individual defendant. In contrast, the legal issue here involves immense sums of money and affect budgetary planning for both the state and counties. State and county governments need to know, as soon as possible, what their rights and obligations are; legislators considering proposals to deal with the current state and county budget crisis need to know how to frame legislation so it does not violate [article XIII B](#). The practical impact of a decision on the people of this state is also of great importance. The failure of the state to provide full subvention funds and the difficulty of the county in filling the gap translate into inadequate staffing and facilities for treatment of thousands of persons. Until the constitutional issues are resolved the legal uncertainties may inhibit both levels of government from taking the steps needed to address this problem. A delay of several years until the Los Angeles case is resolved could result in pain, hardship, or even death for many people. I conclude that, whether or not plaintiffs have standing, this court should address and resolve the merits of the appeal.

D. Conclusion as to standing.

As I have just explained, it is not necessary for plaintiffs to have standing for us to be able to decide the merits of the appeal. Nevertheless, I conclude *348 that plaintiffs have standing both as persons “beneficially interested” under [Code of Civil Procedure section 1086](#) and under the doctrine of *Green v. Obledo, supra*, 29 Cal.3d 126, to bring an action to determine whether the state has violated its duties under [article XIII B](#). The remedy given local agencies and school districts by [Government Code sections 17500- 17630](#) is, as [Government Code section 17552](#) states, the exclusive remedy by which those bodies can challenge the state's refusal to provide subvention funds, but the statute does not limit the remedies available to individual citizens.

III. Merits of the Appeal

A. State funding of care for MIA's.

[Welfare and Institutions Code section 17000](#) requires every county to “relieve and support” all indigent or incapacitated residents, except to the extent that such persons are supported or relieved by other sources.⁷ From 1971 until 1982, and thus at the time [article XIII B](#) became effective, counties were not required to pay for the provision of health services to MIA's, whose health needs were met through the state-funded Medi-Cal program. Since the medical needs of MIA's were fully met through other sources, the counties had no duty under [Welfare and Institutions Code section 17000](#) to meet those needs. While the counties did make general contributions to the Medi-Cal program (which covered persons other than MIA's) from 1971 until 1978, at the time [article XIII B](#) became effective in 1980 the counties were not required to make any financial contributions to Medi-Cal. It is therefore undisputed that the counties were not required to provide financially for the health needs of MIA's when [article XIII B](#) became effective. The state funded all such needs of MIA's.

In 1982, the Legislature passed Assembly Bill No. 799 (1981-1982 Reg. Sess.; Stats. 1982, ch. 328, pp. 1568-1609) (hereafter AB No. 799), which removed MIA's from the state-funded Medi-Cal program as of January 1, 1983, and thereby transferred to the counties, through the County Medical Services Plan which AB No. 799 created, the financial responsibility to provide health

services to approximately 270,000 MIA's. AB No. 799 required that the counties provide health care for MIA's, yet appropriated only 70 percent of what the state would have spent on MIA's had those persons remained a state responsibility under the Medi-Cal program.

Since 1983, the state has only partially defrayed the costs to the counties of providing health care to MIA's. Such state funding to counties was *349 initially relatively constant, generally more than \$400 million per year. By 1990, however, state funding had decreased to less than \$250 million. The state, however, has always included the full amount of its former obligation to provide for MIA's under the Medi-Cal program in the year preceding July 1, 1980, as part of its [article XIII B](#) “appropriations limit,” i.e., as part of the base amount of appropriations on which subsequent annual adjustments for cost-of-living and population changes would be calculated. About \$1 billion has been added to the state's adjusted spending limit for population growth and inflation *solely* because of the state's inclusion of all MIA expenditures in the appropriation limit established for its base year, 1979-1980. The state has not made proportional increases in the sums provided to counties to pay for the MIA services funded by the counties since January 1, 1983.

B. The function of [article XIII B](#).

Our recent decision in *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 486-487 [280 Cal.Rptr. 92, 808 P.2d 235] (hereafter *County of Fresno*), explained the function of [article XIII B](#) and its relationship to [article XIII A](#), enacted one year earlier:

“At the June 6, 1978, Primary Election, [article XIII A](#) was added to the Constitution through the adoption of Proposition 13, an initiative measure aimed at controlling ad valorem property taxes and the imposition of new 'special taxes.' (*Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 231-232 [149 Cal.Rptr. 239, 583 P.2d 1281].) The constitutional provision imposes a limit on the power of state and local governments to adopt and levy taxes. (*City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 59, fn. 1 [266 Cal.Rptr. 139, 785 P.2d 522] (*City of Sacramento*)).

“At the November 6, 1979, Special Statewide Election, [article XIII B](#) was added to the Constitution through the adoption of Proposition 4, another initiative measure. That measure places limitations on the ability of both

state and local governments to appropriate funds for expenditures.

“Articles XIII A and XIII B work in tandem, together restricting California governments' power both to levy and to spend [taxes] for public purposes.’ (*City of Sacramento, supra*, 50 Cal.3d at p. 59, fn. 1.)

“Article XIII B of the Constitution was intended ... to provide 'permanent protection for taxpayers from excessive taxation' and 'a reasonable way to provide discipline in tax spending at state and local levels.’ (See *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 446 [170 Cal.Rptr. 232], quoting and following Ballot Pamp., Proposed Stats. and Amends. to Cal. Const. with arguments to voters, Special Statewide Elec. (Nov. 6, 1979), argument *350 in favor of Prop. 4, p. 18.) To this end, it establishes an 'appropriations limit' for both state and local governments (Cal. Const., art. XIII B, § 8, subd. (h)) and allows no 'appropriations subject to limitation' in excess thereof (*id.*, § 2).⁸ (See *County of Placer v. Corin, supra*, 113 Cal.App.3d at p. 446.) It defines the relevant 'appropriations subject to limitation' as 'any authorization to expend during a fiscal year the proceeds of taxes' (Cal. Const., art. XIII B, § 8, subd. (b).)” (*County of Fresno, supra*, 53 Cal.3d at p. 486.)

Under section 3 of article XIII B the state may transfer financial responsibility for a program to a county if the state and county mutually agree that the appropriation limit of the state will be decreased and that of the county increased by the same amount.⁹ Absent such an agreement, however, section 6 of article XIII B generally precludes the state from avoiding the spending limits it must observe by shifting to local governments programs and their attendant financial burdens which were a state responsibility prior to the effective date of article XIII B. It does so by requiring that “Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the cost of such program or increased level of service”¹⁰

“Section 6 was included in article XIII B in recognition that article XIII A of the Constitution severely restricted the taxing powers of local governments. (See *County of Los Angeles v. State of California* (1987)] 43 Cal.3d 46,

61 [233 Cal.Rptr. 38, 729 P.2d 202].) The provision was intended to preclude the state from shifting financial responsibility for carrying out governmental functions onto local entities that were ill equipped to handle the task. (*Ibid.*; see *Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d 830, 836, fn. 6.) Specifically, it was designed to protect the tax *351 revenues of local governments from state mandates that would require expenditure of such revenues.” (*County of Fresno, supra*, 53 Cal.3d at p. 487.)

C. Applicability of article XIII B to health care for MIA's.

The state argues that care of the indigent, including medical care, has long been a county responsibility. It claims that although the state undertook to fund this responsibility from 1979 through 1982, it was merely temporarily (as it turned out) helping the counties meet their responsibilities, and that the subsequent reduction in state funding did not impose any “new program” or “higher level of service” on the counties within the meaning of section 6 of article XIII B. Plaintiffs respond that the critical question is not the traditional roles of the county and state, but who had the fiscal responsibility on November 6, 1979, when article XIII B took effect. The purpose of article XIII B supports the plaintiffs' position.

As we have noted, article XIII A of the Constitution (Proposition 13) and article XIII B are complementary measures. The former radically reduced county revenues, which led the state to assume responsibility for programs previously financed by the counties. Article XIII B, enacted one year later, froze both state and county appropriations at the level of the 1978-1979 budgets—a year when the budgets included state financing for the prior county programs, but not county financing for these programs. Article XIII B further limited the state's authority to transfer obligations to the counties. Reading the two together, it seems clear that article XIII B was intended to limit the power of the Legislature to retransfer to the counties those obligations which the state had assumed in the wake of Proposition 13.

Under article XIII B, both state and county appropriations limits are set on the basis of a calculation that begins with the budgets in effect when article XIII B was enacted. If the state could transfer to the county a program for which the state at that time had full financial responsibility, the county could be forced to assume additional financial obligations without the right to appropriate additional moneys. The state, at the same

time, would get credit toward its appropriations limit for expenditures it did not pay. County taxpayers would be forced to accept new taxes or see the county forced to cut existing programs further; state taxpayers would discover that the state, by counting expenditures it did not pay, had acquired an actual revenue surplus while avoiding its obligation to refund revenues in excess of the appropriations limit. Such consequences are inconsistent with the purpose of [article XIII B](#).

Our decisions interpreting [article XIII B](#) demonstrate that the state's subvention requirement under [section 6](#) is not vitiated simply because the *352 "program" existed before the effective date of [article XIII B](#). The alternate phrase of [section 6 of article XIII B](#), "'higher level of service[.]" ... must be read in conjunction with the predecessor phrase 'new program' to give it meaning. Thus read, it is apparent that *the subvention requirement for increased or higher level of service is directed to state mandated increases in the services provided by local agencies in existing 'programs.'*" (*County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56 [233 Cal.Rptr. 38, 729 P.2d 202], italics added.)

Lucia Mar Unified School Dist. v. Honig, supra, 44 Cal.3d 830, presents a close analogy to the present case. The state Department of Education operated schools for severely handicapped students, but prior to 1979 *school districts were required by statute to contribute to education of those students from the district at the state schools*. In 1979, in response to the restrictions on school district revenues imposed by Proposition 13, the statutes requiring such district contributions were repealed and the state assumed full responsibility for funding. The state funding responsibility continued until June 28, 1981, when [Education Code section 59300](#) (hereafter [section 59300](#)), requiring school districts to share in these costs, became effective.

The plaintiff districts filed a test claim before the commission, contending they were entitled to state reimbursement under [section 6 of article XIII B](#). The commission found the plaintiffs were not entitled to state reimbursement, on the rationale that the increase in costs to the districts compelled by [section 59300](#) imposed no new program or higher level of services. The trial and intermediate appellate courts affirmed on the ground that [section 59300](#) called for only an "'adjustment of costs'" of educating the severely handicapped, and that "*a shift*

in the funding of an existing program is not a new program or a higher level of service" within the meaning of [article XIII B](#). (*Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d at p. 834, italics added.)

We reversed, rejecting the state's theories that the funding shift to the county of the subject program's costs does not constitute a new program. "[There can be no] doubt that although the schools for the handicapped have been operated by the state for many years, the program was new insofar as plaintiffs are concerned, since *at the time section 59300 became effective* they were not required to contribute to the education of students from their districts at such schools. [¶] ... To hold, under the circumstances of this case, that a shift in funding of an existing program from the state to a local entity is not a new program as to the local agency would, we think, violate the intent underlying [section 6 of article XIII B](#). That article imposed spending limits on state and local governments, and it followed by one year the adoption by initiative of [article XIII A](#), which severely limited the taxing *353 power of local governments. ... [¶] The intent of the section would plainly be violated if the state could, while retaining administrative control¹¹ of programs it has supported with state tax money, simply shift the cost of the programs to local government on the theory that the shift does not violate [section 6 of article XIII B](#) because the programs are not 'new.' Whether the shifting of costs is accomplished by compelling local governments to pay the cost of entirely new programs created by the state, *or by compelling them to accept financial responsibility in whole or in part for a program which was funded entirely by the state before the advent of article XIII B, the result seems equally violative of the fundamental purpose underlying section 6 of that article.*" (*Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d at pp. 835- 836, fn. omitted, italics added.)

The state seeks to distinguish *Lucia Mar* on the ground that the education of handicapped children in state schools had never been the responsibility of the local school district, but overlooks that the local district had previously been required to contribute to the cost. Indeed the similarities between *Lucia Mar* and the present case are striking. In *Lucia Mar*, prior to 1979 the state and county shared the cost of educating handicapped children in state schools; in the present case from 1971-1979 the state and county shared the cost of caring for MIA's under the Medi-Cal program. In 1979, following enactment of Proposition 13, the state took full responsibility for both

programs. Then in 1981 (for handicapped children) and 1982 (for MIA's), the state sought to shift some of the burden back to the counties. To distinguish these cases on the ground that care for MIA's is a county program but education of handicapped children a state program is to rely on arbitrary labels in place of financial realities.

The state presents a similar argument when it points to the following emphasized language from *Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d 830: “[B]ecause section 59300 shifts partial financial responsibility for the support of students in the state-operated schools from the state to school districts—*an obligation the school districts did not have at the time article XIII B was adopted*—it calls for plaintiffs to support a ‘new program’ within the meaning of section 6.” (P. 836, fn. omitted, italics added.) It urges *Lucia Mar* reached its result *only* because the “program” requiring school district funding in that case *was not required by statute* at the effective date of ***354 article XIII B**. The state then argues that the case at bench is distinguishable because it contends Alameda County had a continuing obligation *required by statute* antedating that effective date, which had only been “temporarily”¹² suspended when **article XIII B** became effective. I fail to see the distinction between a case—*Lucia Mar*—in which no existing statute as of 1979 imposed an obligation on the local government and one—this case—in which the statute existing in 1979 imposed no obligation on local government.

The state's argument misses the salient point. As I have explained, the application of **section 6 of article XIII B** does not depend upon when the program was created, but upon who had the burden of funding it when **article XIII B** went into effect. Our conclusion in *Lucia Mar* that the educational program there in issue was a “new” program as to the school districts was not based on the presence or absence of any antecedent statutory obligation therefor. *Lucia Mar* determined that whether the program was new *as to the districts* depended on *when* they were compelled to assume the obligation to partially fund an existing program which they had not funded at the time **article XIII B** became effective.

The state further relies on two decisions, *Madera Community Hospital v. County of Madera* (1984) 155 Cal.App.3d 136 [201 Cal.Rptr. 768] and *Cooke v. Superior Court* (1989) 213 Cal.App.3d 401 [261 Cal.Rptr. 706],

which hold that the county has a statutory obligation to provide medical care for indigents, but that it need not provide precisely the same level of services as the state provided under Medi-Cal.¹³ Both are correct, but irrelevant to this case.¹⁴ The county's obligation to MIA's is defined by **Welfare and Institutions Code section 17000**, not by the former Medi-Cal program.¹⁵ If the ***355** state, in transferring an obligation to the counties, permits them to provide less services than the state provided, the state need only pay for the lower level of services. But it cannot escape its responsibility entirely, leaving the counties with a state-mandated obligation and no money to pay for it.

The state's arguments are also undercut by the fact that it continues to use the approximately \$1 billion in spending authority, generated by its previous total funding of the health care program in question, as a portion of its initial *base spending limit* calculated pursuant to **sections 1 and 3 of article XIII B**. In short, the state may maintain here that care for MIA's is a county obligation, but when it computes its appropriation limit it treats the entire cost of such care as a state program.

IV. Conclusion

This is a time when both state and county governments face great financial difficulties. The counties, however, labor under a disability not imposed on the state, for article XIII A of the Constitution severely restricts their ability to raise additional revenue. It is, therefore, particularly important to enforce the provisions of **article XIII B** which prevent the state from imposing additional obligations upon the counties without providing the means to comply with these obligations.

The present majority opinion disserves the public interest. It denies standing to enforce **article XIII B** both to those persons whom it was designed to protect—the citizens and taxpayers—and to those harmed by its violation—the medically indigent adults. And by its reliance on technical grounds to avoid coming to grips with the merits of plaintiffs' appeal, it permits the state to continue to violate **article XIII B** and postpones the day when the medically indigent will receive adequate health care.

Mosk, J., concurred. ***356**

Footnotes

- 1 The complaint also sought a declaration that the county was obliged to provide health care services to indigents that were equivalent to those available to nonindigents. This issue is not before us. The County of Alameda aligned itself with plaintiffs in the superior court and did not oppose plaintiffs' effort to enforce [section 6](#).
- 2 On November 23, 1987, the County of Los Angeles filed a test claim with the Commission. San Bernardino County joined as a test claimant. The Commission ruled against the counties, concluding that no state mandate had been created. The Los Angeles County Superior Court subsequently granted the counties' petition for writ of mandate ([Code Civ. Proc., § 1094.5](#)), reversing the Commission, on April 27, 1989. (No. C-731033.) An appeal from that judgment is presently pending in the Court of Appeal. (*County of Los Angeles v. State of California*, No. B049625.)
- 3 Plaintiffs argue that they seek only a declaration that AB 799 created a state mandate and an injunction against the shift of costs until the state decides what action to take. This is inconsistent with the prayer of their complaint which sought an injunction requiring defendants to restore Medi-Cal eligibility to all medically indigent adults until the state paid the cost of full health services for them. It is also unavailing.
- An injunction against enforcement of a state mandate is available only after the Legislature fails to include funding in a local government claims bill following a determination by the Commission that a state mandate exists. ([Gov. Code, § 17612](#).) Whether plaintiffs seek declaratory relief and/or an injunction, therefore, they are seeking to enforce [section 6](#). All further statutory references are to the Government Code unless otherwise indicated.
- 4 The test claim by the County of Los Angeles was filed prior to that proposed by Alameda County. The Alameda County claim was rejected for that reason. (See § 17521.) Los Angeles County permitted San Bernardino County to join in its claim which the Commission accepted as a test claim intended to resolve the issues the majority elects to address instead in this proceeding. Los Angeles County declined a request from Alameda County that it be included in the test claim because the two counties' systems of documentation were so similar that joining Alameda County would not be of any benefit. Alameda County and these plaintiffs were, of course, free to participate in the Commission hearing on the test claim. (§ 17555.)
- 5 " 'Local agency' means any city, county, special district, authority, or other political subdivision of the state." (§ 17518.)
- 6 " 'School district' means any school district, community college district, or county superintendant of schools." (§ 17519.)
- 7 Plaintiffs' argument that the Legislature's failure to make provision for individual enforcement of [section 6](#) before the Commission demonstrates an intent to permit legal actions, is not persuasive. The legislative statement of intent to relegate all mandate disputes to the Commission is clear. A more likely explanation of the failure to provide for test cases to be initiated by individuals lies in recognition that (1) because [section 6](#) creates rights only in governmental entities, individuals lack sufficient beneficial interest in either the receipt or expenditure of reimbursement funds to accord them standing; and (2) the number of local agencies having a direct interest in obtaining reimbursement is large enough to ensure that citizen interests will be adequately represented.
- 8 Plaintiffs are not without a remedy if the county fails to provide adequate health care, however. They may enforce the obligation imposed on the county by [Welfare and Institutions Code sections 17000 and 17001](#), and by judicial action. (See, e.g., *Mooney v. Pickett* (1971) 4 Cal.3d 669 [94 Cal.Rptr. 279, 483 P.2d 1231].)
- 9 For this reason, it would be inappropriate to address the merits of plaintiff's claim in this proceeding. (Cf. *Dix v. Superior Court* (1991) 53 Cal.3d 442 [279 Cal.Rptr. 834, 807 P.2d 1063].) Unlike the dissent, we do not assume that in representing the state in this proceeding, the Attorney General necessarily represented the interests and views of these officials.
- 1 The majority states that "Plaintiffs are not without a remedy if the county fails to provide adequate health care They may enforce the obligation imposed on the county by [Welfare and Institutions Code sections 17000 and 17001](#), and by judicial action." (Maj. opn., [ante](#), p. 336, fn. 8)
- The majority fails to note that plaintiffs have already tried this remedy, and met with the response that, owing to the state's inadequate subvention funds, the county cannot afford to provide adequate health care.
- 2 It is of no importance that plaintiffs did not request issuance of a writ of mandate. In *Taschner v. City Council* (1973) 31 Cal.App.3d 48, 56 [107 Cal.Rptr. 214] (overruled on other grounds in *Associated Home Builders etc., Inc. v. City of Livermore* (1976) 18 Cal.3d 582, 596 [135 Cal.Rptr. 41, 557 P.2d 473, 92 A.L.R.3d 1038]), the court said that "[a]s against a general demurrer, a complaint for declaratory relief may be treated as a petition for mandate [citations], and where a complaint for declaratory relief alleges facts sufficient to entitle plaintiff to mandate, it is error to sustain a general demurrer without leave to amend."
- In the present case, the trial court ruled on a motion for summary judgment, but based that ruling not on the evidentiary record (which supported plaintiffs' showing of irreparable injury) but on the issues as framed by the pleadings. This is

essentially equivalent to a ruling on demurrer, and a judgment denying standing could not be sustained on the narrow ground that plaintiffs asked for the wrong form of relief without giving them an opportunity to correct the defect. (See *Residents of Beverly Glen, Inc. v. City of Los Angeles* (1973) 34 Cal.App.3d 117, 127-128 [109 Cal.Rptr. 724].)

3 The majority's argument assumes that the state will comply with a judgment for plaintiffs by providing increased subvention funds. If the state were instead to comply by restoring Medi-Cal coverage for MIA's, or some other method of taking responsibility for their health needs, plaintiffs would benefit directly.

4 The majority emphasizes the statement of purpose of [Government Code section 17500](#): "The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state-mandated local programs has not provided for the effective determination of the state's responsibilities under [section 6 of article XIII B of the California Constitution](#). The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary, and, therefore, in order to relieve unnecessary congestion of the judicial system, it is necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs." The "existing system" to which [Government Code section 17500](#) referred was the Property Tax Relief Act of 1972 ([Rev. & Tax. Code, §§ 2201-2327](#)), which authorized local agencies and school boards to request reimbursement from the state Controller. Apparently dissatisfied with this remedy, the agencies and boards were bypassing the Controller and bringing actions directly in the courts. (See, e.g., *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62 [222 Cal.Rptr. 750].) The legislative declaration refers to this phenomena. It does not discuss suits by individuals.

5 "(a) The initial decision by a county to opt into the system pursuant to Section 77300 shall constitute a waiver of all claims for reimbursement for state-mandated local programs not theretofore approved by the State Board of Control, the Commission on State Mandates, or the courts to the extent the Governor, in his discretion, determines that waiver to be appropriate; provided, that a decision by a county to opt into the system pursuant to Section 77300 beginning with the second half of the 1988-89 fiscal year shall not constitute a waiver of a claim for reimbursement based on a statute chaptered on or before the date the act which added this chapter is chaptered, which is filed in acceptable form on or before the date the act which added this chapter is chaptered. A county may petition the Governor to exempt any such claim from this waiver requirement; and the Governor, in his discretion, may grant the exemption in whole or in part. The waiver shall not apply to or otherwise affect any claims accruing after initial notification. Renewal, renegotiation, or subsequent notification to continue in the program shall not constitute a waiver. [¶] (b) The initial decision by a county to opt into the system pursuant to Section 77300 shall constitute a waiver of any claim, cause of action, or action whenever filed, with respect to the Trial Court Funding Act of 1985, Chapter 1607 of the Statutes of 1985, or Chapter 1211 of the Statutes of 1987." ([Gov. Code, § 77203.5](#), italics added.)

"As used in this chapter, 'state-mandated local program' means any and all reimbursements owed or owing by operation of either [Section 6 of Article XIII B of the California Constitution](#), or [Section 17561 of the Government Code](#), or both." ([Gov. Code, § 77005](#), italics added.)

6 It is true that these officials would participate in a proceeding before the Commission on State Mandates, but they would do so as members of an administrative tribunal. On appellate review of a commission decision, its members, like the members of the Public Utilities Commission or the Workers' Compensation Appeals Board, are not respondents and do not appear to present their individual views and positions. For example, in *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830 [244 Cal.Rptr. 677, 750 P.2d 318], in which we reviewed a commission ruling relating to subvention payments for education of handicapped children, the named respondents were the state Superintendent of Public Instruction, the Department of Education, and the Commission on State Mandates. The individual members of the commission were not respondents and did not participate.

7 [Welfare and Institutions Code section 17000](#) provides that "[e]very county ... shall relieve and support all incompetent, poor, indigent persons, and those incapacitated by age, disease, or accident, lawfully resident therein, when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions."

8 [Article XIII B, section 1](#) provides: "The total annual appropriations subject to limitation of the state and of each local government shall not exceed the appropriations limit of such entity of government for the prior year adjusted for changes in the cost of living and population except as otherwise provided in this Article."

9 [Section 3 of article XIII B](#) reads in relevant part: "The appropriations limit for any fiscal year ... shall be adjusted as follows: "(a) In the event that the financial responsibility of providing services is transferred, in whole or in part ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriation limit of the transferee

entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount. ...”

- 10 [Section 6 of article XIII B](#) further provides that the “Legislature may, but need not, provide such subvention of funds for the following mandates: (a) Legislative mandates requested by the local agency affected; (b) Legislation defining a new crime or changing an existing definition of a crime; or (c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.” None of these exceptions apply in the present case.
- 11 The state notes that, in contrast to the program at issue in *Lucia Mar*, it has not retained administrative control over aid to MIA's. But the quoted language from *Lucia Mar*, while appropriate to the facts of that case, was not intended to establish a rule limiting [article XIII B, section 6](#), to instances in which the state retains administrative control over the program that it requires the counties to fund. The constitutional language admits of no such limitation, and its recognition would permit the Legislature to evade the constitutional requirement.
- 12 The state's repeated emphasis on the “temporary” nature of its funding is a form of post hoc reasoning. At the time [article XIII B](#) was enacted, the voters did not know which programs would be temporary and which permanent.
- 13 It must, however, provide a *comparable* level of services. (See [Board of Supervisors v. Superior Court \(1989\) 207 Cal.App.3d 552, 564 \[254 Cal.Rptr. 905\]](#).)
- 14 Certain language in [Madera Community Hospital v. County of Madera, supra, 155 Cal.App.3d 136](#), however, is questionable. That opinion states that the “Legislature intended that County bear an obligation to its poor and indigent residents, *to be satisfied from county funds*, notwithstanding federal or state programs which exist concurrently with County's obligation and alleviate, to a greater or lesser extent, County's burden.” (P. 151.) Welfare and Institutions Code section 17000 by its terms, however, requires the county to provide support to residents only “when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions.” Consequently, to the extent that the state or federal governments provide care for MIA's, the county's obligation to do so is reduced pro tanto.
- 15 The county's right to subvention funds under [article XIII B](#) arises because its duty to care for MIA's is a state- mandated responsibility; if the county had no duty, it would have no right to funds. No claim is made here that the funding of medical services for the indigent shifted to Alameda County is not a program “ 'mandated' ” by the state; i.e., that Alameda County has any option other than to pay these costs. ([Lucia Mar Unified School Dist. v. Honig, supra, 44 Cal.3d at pp. 836-837](#).)



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Cal.App. 2 Dist., July 23, 2014

59 Cal.4th 59

Supreme Court of California

**LONG BEACH POLICE OFFICERS
ASSOCIATION**, Plaintiff and Appellant,

v.

CITY OF LONG BEACH et al.,

Defendants and Appellants;

Los Angeles Times Communications LLC,

Real Party in Interest and Respondent.

No. S200872.

|

May 29, 2014.

Synopsis

Background: City police officers association brought action against city, seeking an injunction against disclosure, pursuant to the California Public Records Act (CPRA), of names of officers involved in shooting incidents over a five-year period. Newspaper company intervened and filed opposition, and city filed memorandum aligning itself with association. The Superior Court, Los Angeles County, No. NC055491, [Patrick T. Madden](#), J., denied injunction without prejudice to future requests relating to individual officers. Association and city petitioned for writ of mandate, and the Court of Appeal affirmed. Association and city filed separate petitions for review, and the Supreme Court granted review, superseding the opinion of the Court of Appeal.

[Holding:] The Supreme Court, [Kennard](#), J., held that CPRA did not protect officers' names from disclosure.

Affirmed.

[Chin](#), J., dissented with opinion.

West Headnotes (6)

[1] Records

🔑 [Judicial enforcement in general](#)

Any failure to serve newspaper with police lieutenant's declaration did not adversely affect newspaper in Public Records Act action regarding disclosure of names of officers involved in shootings, as trial court concluded that the facts asserted in the declaration were too general and speculative to support the request for injunctive relief prohibiting disclosure. [West's Ann.Cal.Gov.Code § 6250](#).

[2 Cases that cite this headnote](#)

[2] Records

🔑 [Discretion and equitable considerations; balancing interests](#)

Records

🔑 [Evidence and burden of proof](#)

Public Records Act's "catchall exemption" allowing withholding of records if the public interest served by nondisclosure clearly outweighs the interest served by disclosure contemplates a case-by-case balancing process, with the burden of proof on the proponent of nondisclosure to demonstrate a clear overbalance on the side of confidentiality. [West's Ann.Cal.Gov.Code § 6255\(a\)](#).

[4 Cases that cite this headnote](#)

[3] Records

🔑 [Exemptions or prohibitions under other laws](#)

Public Records Act provision which protects records "exempted or prohibited pursuant to federal or state law" incorporates other disclosure prohibitions established by law. [West's Ann.Cal.Gov.Code § 6254\(k\)](#).

[3 Cases that cite this headnote](#)

[4] Records

🔑 [Personal privacy considerations in general; personnel matters](#)

California Public Records Act required disclosure of names of city police officers involved in shootings over five-year period; names themselves were not necessarily linked to information in personnel records, as they likely could be found in documents such as initial incident reports and could be provided without revealing any investigatory or disciplinary matter, public's substantial interest in the conduct of the officers involved in the shootings outweighed the officers' personal privacy interests, and there was no evidence of a specific safety concern regarding any particular officer which justified nondisclosure. [West's Ann.Cal.Gov.Code §§ 6254\(c\), 6255](#); [West's Ann.Cal.Penal Code § 832.7\(a\), 832.8\(d\)](#).

3 Cases that cite this headnote

[5] **Records**

🔑 [Personal privacy considerations in general; personnel matters](#)

When it comes to the Public Records Act disclosure of a peace officer's name, the public's substantial interest in the conduct of its peace officers outweighs, in most cases, the officer's personal privacy interest. [West's Ann.Cal.Gov.Code § 6254\(c\)](#).

3 Cases that cite this headnote

[6] **Records**

🔑 [Matters Subject to Disclosure; Exemptions](#)

A mere assertion of possible endangerment does not clearly outweigh the public interest in access to records. [West's Ann.Cal.Gov.Code § 6255\(a\)](#).

See 2 Witkin, Cal. Evidence (5th ed. 2012) Witnesses, § 312 et seq.

1 Cases that cite this headnote

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Opinion

[KENNARD, J.](#)*

*64 **461 A newspaper asked a city to release the names of police officers involved in certain **462 shootings while on duty. The police union then sought injunctive relief against the city in superior court, attempting to prevent release of the names. The newspaper intervened (seeking disclosure of the names), and the city then aligned itself with the union (opposing disclosure). The trial court denied the union's request for a permanent injunction; that denial was upheld on appeal. We granted the separate petitions for review filed by the city and the union. We now affirm the judgment of the Court of Appeal.

I

Shortly before 5:00 p.m., on December 12, 2010, two City of Long Beach police officers responded to a resident's telephone call about an intoxicated man brandishing a “six-shooter” on neighboring property. At the sight of the two officers, the man (35-year-old Douglas Zerby) pointed at them an object resembling a gun. The officers immediately fired multiple rounds at Zerby, killing him. It turned out that the object Zerby was holding was a garden hose spray nozzle with a pistol grip.

Three days later, reporter Richard Winton of the Los Angeles Times (the Times), asked the Long Beach City Attorney's Office for “[t]he names of Long Beach police officers involved in the December 12[, 2010,] office[r]-involved shooting in the 5300 block of East Ocean Boulevard” (the Zerby shooting), as well as “[t]he names of Long Beach police officers involved in officer [-]involved shootings from Jan[uary] 1[,] 2005 to Dec[ember] 11, 2010” (the nearly six-year period leading up to the Zerby shooting). The request was made under the California Public Records Act ([Gov.Code, § 6250 et seq.](#)).

On December 30, 2010, plaintiff Long Beach Police Officers Association (the Union), the bargaining agent for all Long Beach police officers, sought injunctive relief in the superior court. Named as defendants were the City of Long Beach, the Long Beach Police Department, and its chief of police (collectively, the City). In its complaint, the Union asserted that the City had informed it that, unless prohibited by a court, the City would disclose the information sought by the Times. Accompanying the Union's request for injunctive relief was a declaration by Lieutenant Steve James, the Union's president, expressing concern that release of the officers' names could result *65 in “threats against the well being of officers or their families,” as occurred in one recent police shooting case in which release of an officer's name led to “death threats” against ***59 the officer. James also mentioned an anonymous post on an Internet Web site, wishing that the children of an officer involved in a particular police shooting would experience Christmas without their father. James asserted that the Internet offers broad access to personal information, using only a person's name as an Internet search term.

The superior court issued a temporary restraining order prohibiting the City from disclosing to the Times the names of the officers involved in the Zerby shooting. The court then continued the case to a later date to determine whether to issue a preliminary or permanent injunction, and it allowed the Times to intervene in the action.

Defendant City supported plaintiff Union's request for injunctive relief. The City asserted that the names of the two officers involved in the December 2010 fatal shooting of Zerby were exempt from disclosure under the California Public Records Act. With respect to the names of the City's police officers involved in *earlier* shootings, the City asserted that those names, too, were likely subject to the same statutory exemptions but that its practice was to evaluate each disclosure request on a "case-by-case basis."

The City submitted a declaration by Long Beach Police Lieutenant Lloyd Cox, who was in charge of "the criminal and administrative investigations related to all Officer Involved Shootings." The declaration stated that the police department conducts an administrative investigation of every officer-involved shooting, and, if warranted, an internal criminal investigation follows. Documents resulting from these investigations are treated by the police department as personnel records that are statutorily exempt from disclosure. ****463** Cox's declaration also stated that revealing the name of an officer involved in a shooting could expose the officer and the officer's family to harassment, because the officer's home address and other personal information could easily be found using the Internet. The declaration further stated that when, for example, an officer is involved in a shooting of a gang member, it is not uncommon for the gang to retaliate against the officer. Cox mentioned eight "Officer Safety Bulletins ... about potential retaliation/threats against officers," two of which were related to shootings, and he also described graffiti in the City of Long Beach that read "Strike Kill a Cop."

In arguing against disclosure of the names of the officers involved in the Zerby shooting, the Union and the City cited [Government Code section 6255, subdivision \(a\)](#), which authorizes denial of a public records request when "the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." The Union and the City ***66** argued that

the public interest in preventing harassment, threats, or violence against officers and their families outweighed any benefit the public would gain from disclosure.

[1] The Times moved to strike Lieutenant James's declaration (filed by the Union), but the Times did not object to the declaration of Lieutenant Cox (filed by the City).¹ The trial court struck those *****60** portions of the James declaration that mentioned (1) the general safety concerns associated with releasing the names of officers involved in shootings, (2) the death threats made against specific officers involved in past shootings, and (3) the ease with which a name can be used to gather personal information over the Internet. The trial court then denied the Union's request for a preliminary or permanent injunction, and it discharged the temporary restraining order. The court ruled that none of the disclosure exemptions in the California Public Records Act protected the names of officers involved in shootings. With respect to the potential harassment facing those officers and their families, the court considered such harassment to be speculative in the absence of a particularized showing regarding a specific officer. Recognizing that such a showing might be made in the future, the superior court denied injunctive relief "without prejudice" to a renewed request demonstrating that "releasing the names of particular officers will create a likelihood of harm."

The Union and the City appealed, without success. We then granted their petitions for review.²

II

A. Statutory Law

The California Legislature in 1968, recognizing that "access to information concerning the conduct of the people's business is a fundamental and ***67** necessary right of every person in this state" ([Gov.Code, § 6250](#)), enacted the California Public Records Act, which grants access to public records held by state and local agencies (*id.*, § 6253, subd. (a)). The act broadly defines "[p]ublic records" as including "any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency..." (*Id.*, § 6252, subd. (e).) The act has certain ****464** specific exemptions (*id.*, §§ 6254–6254.30), but a public entity claiming an exemption must show that the

requested information falls within the exemption (*id.*, § 6255, subd. (a)).

[2] Government Code section 6255's subdivision (a) contains a "catchall exemption." (*Michaelis, Montanari & Johnson v. Superior Court* (2006) 38 Cal.4th 1065, 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.) It allows a public agency to "justify withholding any record by demonstrating that ... on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." (Gov.Code, § 6255, subd. (a).) As we have said in the past, "this provision contemplates a case-by-case balancing process, with the burden of proof on the proponent of nondisclosure to demonstrate a clear overbalance on the side of confidentiality." (*Michaelis, Montanari & Johnson, supra*, at p. 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.)

[3] Also relevant here is Government Code section 6254, subdivision (c), which ***61 protects "[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy." But the Union and the City place their greatest reliance on Government Code section 6254, subdivision (k). That provision protects "[r]ecords, the disclosure of which is exempted or prohibited pursuant to federal or state law, including, but not limited to, provisions of the Evidence Code relating to privilege." Succinctly put, subdivision (k) " 'incorporates other [disclosure] prohibitions established by law.' " (*Copley Press, Inc. v. Superior Court* (2006) 39 Cal.4th 1272, 1283, 48 Cal.Rptr.3d 183, 141 P.3d 288 (*Copley*), quoting *CBS, Inc. v. Block* (1986) 42 Cal.3d 646, 656, 230 Cal.Rptr. 362, 725 P.2d 470.) The "prohibitions" pertinent here are those set forth in a set of discovery statutes that the Legislature enacted in 1978 in response to our 1974 decision in *Pitchess v. Superior Court* (1974) 11 Cal.3d 531, 113 Cal.Rptr. 897, 522 P.2d 305 (*Pitchess*).

In *Pitchess*, a defendant charged with battery on four sheriff's deputies (Pen.Code, §§ 242, 243, subd. (b)) claimed he was defending himself against the deputies' use of excessive force. We held that defendants in similar situations had a right, albeit limited, to discover from a peace officer's employer the existence of any previous complaints about the officer's use of excessive force. (*Pitchess, supra*, 11 Cal.3d at pp. 537–538, 113 Cal.Rptr. 897, 522 P.2d 305.) In response to our *68 decision, the Legislature enacted several statutes, which we hereafter

refer to as the "*Pitchess* statutes" and which we summarize below.

Under the *Pitchess* statutes, a public entity that employs peace officers must investigate and retain citizen complaints of any officer misconduct, such as the use of excessive force. (Pen.Code, § 832.5.) Litigants, upon a showing of good cause, are given limited access to records of such complaints and investigations (Evid.Code, §§ 1043, 1045), but such records are otherwise "confidential" and may "not be disclosed" (Pen.Code, §§ 832.7, subd. (a), 832.8, subd. (e)). Also protected as "confidential" are "[p]eace officer ... personnel records" and "information obtained from these records." (*Id.*, § 832.7, subd. (a).) Such "personnel records" include an officer's personal and family information, medical history, election of benefits (*id.*, § 832.8, subs. (a), (b) & (c)), as well as matters related to the officer's "advancement, appraisal, or discipline" (*id.*, subd. (d)). In addition, confidentiality applies to any information that "would constitute an unwarranted invasion of [a peace officer's] personal privacy." (*Id.*, § 832.8, subd. (f).)

One other piece of legislation merits mention here. In 2004, California's voters passed an initiative measure that added to the state Constitution a provision directing the courts to broadly construe statutes that grant public access to government information and to narrowly construe statutes that limit such access. (Cal. Const., art. I, § 3, subd. (b)(2).) That provision, however, does not affect the construction of any statute "to the extent ... it protects [the] right to privacy, including any statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer." (**465 Cal. Const., art. I, § 3, subd. (b)(3).) Thus, by its express terms, the constitutional provision excludes from the requirement of narrow construction those statutes that protect the privacy interests of peace officers, including Government Code section 6254's subdivision (c) and the *Pitchess* statutes, both of which are at issue here.

B. Decisional Law

Relevant here are two of this court's recent decisions, which considered the interplay ***62 between the *Pitchess* statutes and requests under the California Public Records Act for disclosure of peace officers' names.

In *Copley, supra*, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288 (decided in 2006), a newspaper publisher sought access to a civil service commission's records of an administrative appeal brought by a county sheriff's deputy who had been terminated for disciplinary reasons. After the commission denied the request, the publisher unsuccessfully petitioned the superior court for a writ of mandate, seeking to compel disclosure. The publisher then appealed, and the Court of Appeal *69 directed the civil service commission to give the publisher access to the records, and also to disclose the deputy's name. The Court of Appeal reasoned that because the *Pitchess* statutes define "personnel records" as any file maintained under the officer's name *by the officer's employing agency* (Pen.Code, § 832.8) and because the civil service commission was not the officer's employing agency, the civil service commission's records did not qualify as "personnel records" protected by the *Pitchess* statutes. At the request of two police unions that had intervened in the action, we granted review and, with one justice dissenting, reversed the Court of Appeal.

Copley held that the civil service commission's records of the deputy's appeal were confidential "personnel records" under the *Pitchess* statutes (Pen.Code, §§ 832.7, 832.8) and therefore exempt from disclosure. (*Copley, supra*, 39 Cal.4th at pp. 1286–1296, 48 Cal.Rptr.3d 183, 141 P.3d 288.) *Copley* explained that neither the language nor the legislative history of the *Pitchess* statutes suggested that a peace officer's privacy rights should have less protection simply because the officer's employer uses an outside agency like the civil service commission to conduct its administrative appeals. (*Copley, at p. 1295*, 48 Cal.Rptr.3d 183, 141 P.3d 288.) *Copley* also rejected the Court of Appeal's conclusion that *the name* of the officer who brought the appeal had to be disclosed, noting that the *Pitchess* statutes were "designed to protect, among other things, 'the identity of officers' subject to [citizen] complaints.'" (*Copley, at p. 1297*, 48 Cal.Rptr.3d 183, 141 P.3d 288, quoting Pen.Code, § 832.7, subd. (a); see *Copley, at p. 1297*, 48 Cal.Rptr.3d 183, 141 P.3d 288, quoting Pen.Code, § 832.7, subd. (c).)

Copley then discussed the Court of Appeal's reliance on an earlier appellate decision, *New York Times Co. v. Superior Court* (1997) 52 Cal.App.4th 97, 60 Cal.Rptr.2d 410 (*New York Times*), which broadly declared that the *Pitchess* statutes do not prevent disclosure of *the names* of peace officers. (*Copley, supra*, 39 Cal.4th at pp. 1297–

1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.) That categorical statement was made, we said, "[w]ithout any analysis," and was "simply incorrect, at least insofar as it applies to disciplinary matters like the one at issue [in *Copley*]." (*Id. at p. 1298*, 48 Cal.Rptr.3d 183, 141 P.3d 288.) We disapproved *New York Times* to the extent that decision conflicted with our analysis in *Copley*. (*Copley, at p. 1298*, 48 Cal.Rptr.3d 183, 141 P.3d 288.)

In 2007, just one year after *Copley, supra*, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288, we again addressed the issue of a newspaper's request, made under the California Public Records Act, for disclosure of the names of certain peace officers. In *Commission on Peace Officer Standards and Training v. Superior Court* (2007) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462 (*Commission on Peace Officer Standards*), a newspaper sought certain information about peace officers hired statewide by various California public entities during a specified 10-year period. ***63 The information was contained in a database maintained by a public agency. When the agency denied the newspaper's request, the *70 newspaper challenged that decision in superior court, which ordered disclosure **466 of each officer's name, the appointing agency, the date of new appointment, and, if applicable, the date of termination. The Court of Appeal reversed, but a majority of this court disagreed with the Court of Appeal. (*Id. at p. 303*, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

In *Commission on Peace Officer Standards*, the public agency that had compiled the peace officer database did not employ any of the peace officers, and therefore the entries in its database were not "personnel records" under a literal reading of the *Pitchess* statutes (Pen.Code, § 832.8 [limiting personnel records to records held in files maintained by an individual's employer]). Nonetheless, a majority of this court concluded that the information in the database would fall within the protections afforded personnel records if the information was "obtained from" personnel records maintained by the employing agencies of the peace officers in question. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 289, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The majority further concluded, however, "that peace officer personnel records include only the types of information enumerated in [Penal Code] section 832.8" (*id. at p. 293*, 64 Cal.Rptr.3d 661, 165 P.3d 462), and because the specific information the trial court ordered disclosed (the names of the officers,

their employing agencies, and their employment dates) did not fall into any of the enumerated categories, it was not information obtained from protected personnel records (*id.* at pp. 294–299, 64 Cal.Rptr.3d 661, 165 P.3d 462), and therefore it was subject to disclosure.

Commission on Peace Officer Standards next held that [Government Code section 6254](#)'s subdivision (c), which is part of the California Public Records Act, also did not preclude disclosure of the information covered by the superior court's order. (See *Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that statutory provision authorizes denial of a public records request when the information sought consists of “[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.” ([Gov.Code, § 6254, subd. \(c\)](#).) *Commission on Peace Officer Standards* assumed for purposes of its analysis that the records at issue “may be characterized as ‘[p]ersonnel ... or similar files.’ ” (*Commission on Peace Officer Standards, at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.*) But it noted that the exemption set forth in [section 6254](#)'s subdivision (c) requires a balancing of “the privacy interests of peace officers in the information at issue against the public interest in disclosure,” and it further noted that the party opposing disclosure “has the burden” of showing that the records at issue fall within the exemption—a showing the agency failed to make in *Commission on Peace Officer Standards*. (*Commission on Peace Officer Standards, at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.*)

Against this background of relevant statutes and court decisions, we now consider the disclosure request of the Times.

*71 III

[4] The Times, citing the California Public Records Act, seeks disclosure of the names of the two Long Beach police officers involved in the December 12, 2010, fatal shooting of Zerby, as well as the ***64 names of any Long Beach officers involved in shootings occurring between January 1, 2005, and December 11, 2010. The Union and the City oppose disclosure. They rely largely on the confidentiality protections afforded peace officers under the *Pitchess* statutes, focusing in particular on [Penal Code section](#)

[832.7](#)'s subdivision (a) (protecting from disclosure a peace officer's “personnel records”) and [Penal Code section 832.8](#)'s subdivision (d) (defining “personnel records” as including records of employee “appraisal[] or discipline”).

The Union and the City also attach significance to the italicized language in this quote from *Commission on Peace Officer Standards*: “[T]he legislative concern [in adopting [sections 832.7](#) and [832.8](#)] appears to have been with *linking a named officer to the private or sensitive information listed in [section 832.8](#)*. ... It seems unlikely that the Legislature contemplated that the identification of an individual as a peace officer, *unconnected **467 to any of the information it defined as part of a personnel record*, would be rendered confidential by [section 832.8](#).” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added.) The Union and the City contend that disclosing the names of officers involved in on-duty shootings necessarily *links* the named officers to private or sensitive information in their personnel files, information made confidential under [Penal Code section 832.7](#)'s subdivision (a). The Union and the City reason that because every on-duty shooting is routinely investigated by the employing agency, the details of every such incident (including the names of the officers involved) are “records relating to” officer “appraisal[] or discipline” ([Pen.Code, § 832.8, subd. \(d\)](#)), which, by definition, are confidential “personnel records” (*id.*, [§ 832.8](#)). We are not persuaded.

Although the *Pitchess* statutes limit public access to personnel records ([Pen.Code, § 832.7, subd. \(a\)](#)), including officer names if they are *linked* to information in personnel records (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462), many records routinely maintained by law enforcement agencies are not personnel records. For example, the information contained in the initial incident reports of an on-duty shooting are typically not “personnel records” as that term is defined in [Penal Code section 832.8](#). It may be true that such shootings are routinely investigated by the employing agency, resulting eventually in some sort of officer appraisal or discipline. But only the records *generated* in connection with that appraisal or discipline would come within the statutory definition of personnel records ([Pen.Code, § 832.8, subd. \(d\)](#)). We do not read the phrase “records relating to ... [¶] ... *72 [¶] ... [e]mployee ... appraisal[] or discipline” (*ibid.*) so broadly as to include every record that might be *considered* for

purposes of an officer's appraisal or discipline, for such a broad reading of the statute would sweep virtually all law enforcement records into the protected category of "personnel records" (*id.*, § 832.8).

Government Code section 6254's subdivision (f) lends some support to our conclusion. Under that statute, when a shooting by a peace officer occurs during an arrest (Gov.Code, § 6254, subd. (f)(1)) or in the course of responding to a complaint or request for assistance (*id.*, § 6254, subd. (f)(2)), and when the officer's name is recorded as one of the "factual circumstances" of the incident, disclosure of the officer's name is generally required. It thus appears that the Legislature draws a distinction between (1) records of factual information about an incident (which generally must be disclosed) and (2) records generated as part of an internal investigation ***65 of an officer in connection with the incident (which generally are confidential). We therefore agree with this point made in a 2008 opinion by the California Attorney General: "Generally speaking, a response to a request just for the names of officers involved in a particular incident may be provided without revealing any investigatory or disciplinary matter that may have arisen out of the incident. Disclosure would merely communicate a statement of fact that the named officers were involved in the incident. It would not imply any judgment that the actions taken were inappropriate or even suspect." (91 Ops.Cal.Atty.Gen. 11, 16–17 (2008), fn. omitted.) An employing agency is, of course, free to emphasize, when complying with a California Public Records Act request, that its disclosure of the names of officers involved in an incident does not imply any wrongdoing by those officers.

Significantly, the *Pitchess* statutes are silent as to whether the names of officers involved in shootings are protected "personnel records." (Pen.Code, § 832.8.) That silence is important because, as this court observed in *Commission on Peace Officer Standards*, the personnel records exemption is limited to the categories of information that are expressly "enumerated" in Penal Code section 832.8. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 293, 64 Cal.Rptr.3d 661, 165 P.3d 462.) That the Legislature did not intend to protect peace officers' identities can also be inferred from the Legislature's enactment of Penal Code section 830.10, which requires uniformed officers to display their name or identification **468 number. That statute reflects a legislative policy

that, generally, the public has a right to know the identity of an officer involved in an on-duty shooting.

Misplaced is the reliance by the Union and the City on this court's decision in *Copley, supra*, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288. There, as we noted earlier, a newspaper publisher sought records of an administrative appeal brought by a sheriff's *73 deputy who had been terminated. This court concluded that the records (including the deputy's name) were confidential personnel records under the *Pitchess* statutes. (*Copley, at pp. 1297–1298*, 48 Cal.Rptr.3d 183, 141 P.3d 288.) Later, in *Commission on Peace Officer Standards*, this court emphasized that the records requested in *Copley* would have "linked" the deputy's name to "private or sensitive" personnel matters, thus explaining why the name at issue in *Copley* was protected. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462; see *id.* at pp. 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Here, by contrast, disclosing the names of officers involved in various shootings would not imply that those shootings resulted in disciplinary action against the officers, and it would not link those names to any confidential personnel matters or other protected information.

In arguing here against disclosure of the officers' names, the Union and the City note this court's disapproval in *Copley, supra*, 39 Cal.4th at page 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288, of the Court of Appeal's statement in *New York Times, supra*, 52 Cal.App.4th at page 101, 60 Cal.Rptr.2d 410, that "'an individual's name is not exempt from disclosure'" under the *Pitchess* statutes. But, as we explained in *Commission on Peace Officer Standards, supra*, 42 Cal.4th at page 298, 64 Cal.Rptr.3d 661, 165 P.3d 462, this court disapproved the statement from *New York Times* only "'insofar as it applie [d] to disciplinary matters like the one at issue'" in *Copley*. (See *Copley, at p. 1298*, 48 Cal.Rptr.3d 183, 141 P.3d 288.) The records sought in *Copley* linked the officer's name, not just to an on-duty shooting, but to a ***66 confidential disciplinary action involving the officer, and therefore they were exempt from disclosure. (See *Commission on Peace Officer Standards, supra*, 42 Cal.4th at pp. 295, 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Thus, *Copley's* disapproval of the statement from *New York Times* did not alter the latter case's core holding, generally permitting disclosure of the names of peace officers involved in on-duty shootings.

(See 91 Ops.Cal.Atty.Gen. 11, 13–15 (2008) [discussing Copley's effect on *New York Times*].)

[5] Nor does [Government Code section 6254's](#) subdivision (c), which is part of the California Public Records Act, help the Union and the City in their effort to prevent disclosure of the names of officers involved in shootings. As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that provision exempts from disclosure “[p]ersonnel ... or similar files” if disclosure “would constitute an unwarranted invasion of personal privacy.” ([Gov.Code, § 6254, subd. \(c\)](#).) A serious question arises as to whether the names of peace officers involved in particular law enforcement incidents can be characterized as “[p]ersonnel ... or similar files” (*ibid.*). Moreover, when it comes to the disclosure of a peace officer's name, the public's substantial interest in the conduct of its peace officers outweighs, in most cases, the officer's personal privacy interest. As we noted in *Commission on Peace Officer Standards*: “Peace officers ‘hold one of the most powerful positions in our society; our dependence on them is high and the potential for abuse of power is far from insignificant.’” [*74 City of Hemet v. Superior Court \(1995\) 37 Cal.App.4th 1411, 1428 \[44 Cal.Rptr.2d 532\]](#).) A police officer ‘possesses both the authority and the ability to exercise force. Misuse of [this] authority can result in significant deprivation of constitutional rights and personal freedoms, not to mention bodily injury and financial loss.’ ([Gray v. Udevitz \(10th Cir.1981\) 656 F.2d 588, 591](#).)” ([Commission on Peace Officer Standards, supra, 42 Cal.4th at pp. 299–300, 64 Cal.Rptr.3d 661, 165 P.3d 462](#).) Thus, the public's significant interest in the conduct of its peace officers “diminishes and counterbalances” an officer's privacy interest in keeping his or her name confidential. (*Id.* at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

****469** In a case such as this one, which concerns officer-involved shootings, the public's interest in the conduct of its peace officers is particularly great because such shootings often lead to severe injury or death. Here, therefore, in weighing the competing interests, the balance tips strongly in favor of identity disclosure and against the personal privacy interests of the officers involved. Of course, if it is essential to protect an officer's anonymity for safety reasons or for reasons peculiar to the officer's duties—as, for example, in the case of an undercover officer—then the public interest in disclosure of the officer's name may need to give way. (See [International Federation](#)

[of Professional and Technical Engineers, Local 21, AFL–CIO v. Superior Court \(2007\) 42 Cal.4th 319, 337, 64 Cal.Rptr.3d 693, 165 P.3d 488](#).) That determination, however, would need to be based on a particularized showing, which was not made here.

We next consider the City's assertion that [Government Code section 6254's](#) subdivision (f) permits it to withhold the names of officers involved in on-duty shootings. That provision exempts from disclosure “[r]ecords ... of investigations conducted by ... any state or local police agency.” (*Ibid.*) The Times here is not seeking the records of any administrative or criminal investigation, so that exemption is inapplicable.

*****67 [6]** Finally, we consider the catchall exemption in [Government Code section 6255's](#) subdivision (a), which allows a public agency to withhold any public record if the agency shows that “on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record.” The catchall exemption sets forth a balancing test, and we have already concluded that, generally, the balance of interests favors disclosing the names of peace officers involved in on-duty shootings. (See 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468, *ante*.) Vague safety concerns that apply to all officers involved in shootings are insufficient to tip the balance against disclosure of officer names. As we have said in the past, “[a] mere assertion of possible endangerment does not ‘clearly outweigh’ the public interest in access to ... records.” ([CBS, Inc. v. Block, supra, 42 Cal.3d at p. 652, 230 Cal.Rptr. 362, 725 P.2d 470](#).)

The Union and the City assert that disclosing the names of peace officers involved in shootings could lead to harassment of those officers and their ***75** families. In rejecting that argument, the trial court found that the Union and the City had offered “no evidence” of a “specific safety concern regarding any particular officer.” We agree. The declaration by Long Beach Police Lieutenant Cox (submitted by the City) described the possibility of gang retaliation against officers involved in shooting gang members, but those concerns were general in nature. The December 2010 Zerby shooting did not involve a gang member, and the Union and the City did not identify other shootings that did involve a gang member. The Cox declaration also mentioned two safety bulletins warning of “potential retaliation/threats” against

officers involved in shootings, and it described graffiti that read “Strike Kill a Cop,” but those vague concerns do not establish any specific danger to the officers involved in the Zerby shooting or any shooting that occurred in the six years before the Zerby shooting (see the Times's public records request, quoted at 172 Cal.Rptr.3d at p. 58, 325 P.3d at p. 462, *ante*).

We do not hold that the names of officers involved in shootings have to be disclosed in every case, regardless of the circumstances. We merely conclude, as did the trial court and the Court of Appeal, that the particularized showing necessary to outweigh the public's interest in disclosure was not made *here*, where the Union and the City relied on only a few vaguely worded declarations making only general assertions about the risks officers face after a shooting. The public records request by the Times is broadly worded and covers a wide variety of incidents. Thus, the Union and the City sought a blanket rule preventing the disclosure of officer names *every time* an officer is involved in a shooting. Such a rule would even prevent disclosure of the name of an officer who acted in a heroic manner that was unlikely to provoke retaliation of any kind, in which case officer ****470** safety would not be an issue. We reject that blanket rule.

The trial court's denial of injunctive relief was without prejudice to any later evidentiary showing that disclosing a particular officer's name would compromise that officer's safety or the safety of the officer's family. That ruling permits further litigation by the Union, and it reflects the trial court's recognition, which we share, that the public's interest in access to public records is not absolute and must be weighed against the countervailing privacy and safety interests of peace officers. Understandable are the general safety concerns of officers who fear retaliation from angry members of the community *****68** after an officer-involved shooting, especially when the shooting results in the death of an unarmed person. But the Legislature, whose laws we must construe, has not gone so far as to protect the names of all officers involved in such shootings. That the Legislature generally considers it important for the public to know the identities of the officers serving the community is reflected in the statutory provision requiring a uniformed officer to display either a name or an identification number ([Pen.Code, § 830.10](#)).

*76 DISPOSITION

We affirm the judgment of the Court of Appeal, which upheld the trial court's denial of the Union's requested injunctive relief.

WE CONCUR: [CANTIL-SAKAUYE, C.J.](#), [BAXTER, WERDEGAR](#), [CORRIGAN](#), [LIU, JJ.](#)

Dissenting Opinion by [CHIN, J.](#)

I disagree with the majority's conclusion that the City of Long Beach (the City) and the Long Beach Police Officers Association (the Union) have failed to show that the information the Los Angeles Times (the Times) has requested—the names of the officers “involved in” the December 12, 2010, shooting of Douglas Zerby and the names of all police officers “involved in” shootings from January 1, 2005, until December 11, 2010—is exempt from disclosure under the California Public Records Act (CPRA) ([Gov.Code, § 6250 et seq.](#)).¹ In my view, the evidence in the record of the safety threat faced by police officers identified as having been involved in a shooting establishes that the requested information is exempt from disclosure under [section 6254, subdivision \(c\)](#), which provides that the CPRA does not require disclosure of “[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.” I therefore dissent.

In relying on this section, the Union acknowledges that the majority in [Commission on Peace Officer Standards and Training v. Superior Court \(2007\) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462](#) ([Commission on Peace Officer Standards](#)) held that “the privacy and safety interests of peace officers” as a group regarding the mere fact of their employment “do not outweigh the public's interest in the disclosure of [that] information.” ([Commission on Peace Officer Standards, supra, 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#)) The Union argues, however, that the “heightened safety concerns of officers who have been involved in shootings” warrant striking a different “balance” with regard to this “subgroup.” In support of its argument, the Union relies on the declaration of Long Beach Police Lieutenant Lloyd Cox (Cox declaration), which states in relevant part: (1) “A number of officer involved shootings

involve gang members or violent criminals”; (2) “When an officer is involved in a shooting with a gang member, it is not uncommon for the gang to retaliate against law enforcement officers”; (3) “Since late 2007, the Long Beach Police Department has issued eight Officer Safety Bulletins to the department about potential retaliation/threats against officers, two of which were directly related to shootings involving police officers. As recently as January 10, 2011, the department was notified of graffiti at 5100 Appian Way *77 that was approximately 4 feet high and 6 inches long which read ‘Strike Kill a Cop’”; and (4) “Today, in the age of the internet, knowing an individual's name can be the gateway to a world of information. Public documents ***69 are readily **471 accessible on line and can provide anyone with the home address of an individual, including a police officer. The address of a police officer in the hands of a gang member, violent offender, or angry friend, relative, or associate of a person who was shot by a police officer is of great concern for the personal safety of both the officer and their [sic] family. Therefore the Long Beach Police Department insists on protecting the identity of its officers, when those officers are involved in critical incidents, including shootings, in order to ensure their safety and the safety of their families.”

I agree with the Union's argument. As I explained in *Commission on Peace Officer Standards*, “in 1990, the Legislature amended subdivision (a) of [Penal Code] section 832.8 by adding [officers] ‘home addresses’ to the list of examples of confidential ‘[p]ersonal data.’ (Stats.1990, ch. 264, § 1, p. 1535.) According to the amendment's legislative history, one of the Legislature's purposes in adding ‘home addresses’ to the list was to protect officers and their families. (Assem. Com. on Public Safety, Analysis of Sen. Bill 1985 (1989–1990 Reg. Sess.) as amended May, 16, 1990, p. 2.) Given that publicly available databases on the Internet make it easy to link a name to an address, the release of an officer's name would not seem to pose much, if any, less of a safety risk than would disclosing an officer's home address. (See *Frank v. City of Akron* (6th Cir.2002) 290 F.3d 813, 819 [‘Most individuals’ addresses ... are readily available on the Internet’].) ... [I]n light of the accessibility of information through the Internet, it would be entirely ‘feasible’ for someone hostile toward the police to use the list of names to locate peace officers' addresses in order to ‘harass them’ or their families. [Citation.] Moreover, in light of the Legislature's acknowledgment of the dangers faced by

officers and their families, ... we [cannot] simply dismiss this threat as being ‘purely speculative.’ (See *King County v. Sheehan* [(2002) 114 Wash.App. 325, 340, 57 P.3d 307] [it is ‘naïve ... to believe that police officers who are identified on anti-police web sites ... by name and home address ... could not thereby be placed in danger or subjected to harassment’].)” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 317, 64 Cal.Rptr.3d 661, 165 P.3d 462 (dis. opn. of Chin, J.)) The evidence in the record here amply supports this analysis.

Nothing in the majority's brief discussion of section 6254, subdivision (c), convinces me otherwise. The majority first asserts that there is a “serious question” as “to whether the names of peace officers involved in particular law enforcement incidents can be characterized as ‘[p]ersonnel ... or similar files’ ” within the meaning of section 6254, subdivision (c). (Maj. opn., ante, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) However, for reasons I have explained in a previous case, I have no trouble concluding that the names of officers who have been involved in a *78 shooting constitute “personnel ... or similar files” under section 6254, subdivision (c). (See *International Federation of Professional and Technical Engineers, Local 21, AFL–CIO v. Superior Court* (2007) 42 Cal.4th 319, 350–351, 64 Cal.Rptr.3d 693, 165 P.3d 488 (conc. & dis. opn. of Chin, J.) (*International Federation*).)

The majority then moves on to its primary focus: the public's interest. Relying on *Commission on Peace Officer Standards*, the majority first identifies the public's interest generally in “the conduct of its peace officers”—specifically, the “[m]isuse” of their authority—and asserts that, “when it comes to the disclosure of a peace officer's name,” this interest “outweighs, in most cases, the officer's personal privacy interest.” (Maj. opn., ***70 ante, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468.) The majority next asserts that this general public interest “is particularly great” in connection with “officer-involved shootings” because “such shootings often lead to severe injury or death.” (Maj. opn., ante, at p. 66, 325 P.3d at p. 468.) This heightened public interest, the majority states, “tips” the balance here “strongly in favor of identity disclosure.” (*Id.* at p. 66, 325 P.3d at p. 469.)

The majority's discussion is unpersuasive for several reasons. First, the majority fails to explain how disclosing the name of an officer who has in any way been “involved in **472 officer involved shootings”—which is what the

Times seeks—provides any information about whether the involved officers “ ‘ [m]isuse[d] ’ ” their authority. (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) Thus, merely knowing which officers were “involved in officer involved shootings” does little, if anything, to advance the public's interest in “the conduct of its peace officers.” (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 468.)

Second, the majority's assessment of the public's interest is inconsistent with the Legislature's and the voters' view of that interest. Through the *Pitchess* statutes (see maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 60–61, 325 P.3d at pp. 464–465), the Legislature has precluded the general public from obtaining “[p]eace officer ... personnel records” or “information obtained from these records.” (Pen.Code, § 832.7, subd. (a).) It has specified that this restriction protects records “relating to” (1) an officer's “advancement, appraisal, or discipline” (*id.*, § 832.8, subd. (d)), and (2) “[c]omplaints, or investigations of complaints, concerning an event or transaction in which [an officer] participated, or which he or she perceived, and pertaining to the manner in which he or she performed his or her duties” (*id.*, § 832.8, subd. (e)). It has authorized law enforcement agencies to “disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers” *only* “if that information is in a form which does not identify the individuals involved.” (*Id.*, § 832.7, subd. (c).) These provisions clearly express *the Legislature's* view regarding the public's interest in discovering whether particular officers have misused their power or even have been the subject of complaints about their conduct.

*79 The voters have ratified the Legislature's view by passing a constitutional provision that expressly preserves “statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer.” (Cal. Const., art. I, § 3, subd. (b)(3).) The majority improperly ignores these expressions of policy by the Legislature and the voters, and improperly substitutes its own view of policy. As a court, we have neither prerogative nor power “to substitute our public policy judgment” for that of the Legislature and the voters. (*Thomas v. City of Richmond* (1995) 9 Cal.4th 1154, 1165, 40 Cal.Rptr.2d 442, 892 P.2d 1185.)

The majority errs in asserting that Penal Code section 830.10 “reflects a legislative policy that, generally, the public has a right to know the identity of an officer

involved in an on-duty shooting.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468.) That section provides: “Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of the officer.” (Pen.Code, § 830.10.) On its face, the section applies only to “uniformed” officers. (*Ibid.*) Thus, to the extent it has any relevance to officers who are *not* in uniform, it indicates a legislative intent to protect their identities. Even as to uniformed officers, ***71 it fails to support the majority's broad conclusion that the public, “generally,” has a right to know the identity of officers involved in shootings. (Maj. opn., *ante*, at p. 64, 325 P.3d at p. 467.) Under the section, police departments may choose not to require their uniformed officers to display their names, and may instead require them only to display their “identification number[s].” (Pen.Code, § 830.10.) Even were the statute to require officers to display their names, a statute affording the immediate participants in a police encounter access to the officers' names does not reflect a far broader legislative policy that, “generally, the public has a right to know the identity of an officer involved in an on-duty shooting.” (Maj. opn., *ante*, at p. 65, 325 P.3d at p. 468.) This conclusion is obvious from the fact that, as noted above, the *Pitchess* statutes allow law enforcement agencies to “disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers” *only* “if that information is in a form which does not identify the individuals involved.” (Pen.Code, § 832.7, subd. (c).) In other words, the Legislature has precluded release of identifying information *generally to the public* even though the names of officers against whom complaints have been made are known to those who have filed complaints. As the **473 majority recognized in *Commission on Peace Officer Standards*, “the mere fact that officers' names” may be displayed on their uniforms does not mean “that the information cannot be considered personal or private. (See *Department of Defense v. FLRA* (1994) 510 U.S. 487, 500, 114 S.Ct. 1006, 127 L.Ed.2d 325 ... [‘An individual's [privacy] interest in controlling the dissemination of information regarding personal matters does not dissolve *80 simply because that information may be available to the public in some form’].)”² (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 296, fn. 5, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

Nor do I agree with the majority that, under section 6254, subdivision (f), “when a shooting by a peace

officer occurs during an arrest [citation] or in the course of responding to a complaint or request for assistance [citation], and when the officer's name is recorded as one of the factual circumstances of the incident, disclosure of the officer's name is generally required.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 64, 325 P.3d at p. 467.) [Section 6254, subdivision \(f\)](#), generally exempts from disclosure under the CPRA “[r]ecords of complaints to, or investigations conducted by, ... any state or local police agency.” As here relevant, it further provides that, “[n]otwithstanding any other provision of this subdivision,” a law enforcement agency “shall” disclose the following: (1) “the factual circumstances surrounding the arrest” of each person the agency arrests (§ 6254, subd. (f)(1)); and (2) the “nature of the response” to all complaints or requests for assistance the agency receives, “including, ***72 to the extent the information regarding crimes alleged or committed or any other incident investigated is recorded, ... the factual circumstances surrounding the crime or incident” (*id.*, subd. (f)(2)). Where one of the specified incidents involves a shooting, it is not at all clear that the “factual circumstances surrounding” the incident (*id.*, subd. (f)(1), (2)) include the names of officers involved in the shooting. The majority cites, and I have found, no case supporting that view. Moreover, the language stating that these disclosure provisions apply “[n]otwithstanding any other provision of *this subdivision*” (*id.*, subd. (f), italics added) indicates that the section's disclosure requirement does not override the confidentiality provisions found in other statutes. Our courts of appeal have so construed the statute. (*County of Los Angeles v. Superior Court* (1993) 18 Cal.App.4th 588, 600, 22 Cal.Rptr.2d 409 [“we cannot construe [section 6254, subdivision \(f\)](#), to require” disclosure of “law enforcement information” the *Pitchess* statutes make confidential].) Finally, the statute itself authorizes nondisclosure “to the extent that disclosure of a particular item of information would endanger the safety of a person involved in an investigation or would endanger the successful completion of the *81 investigation or a related investigation.” (§ 6254, subd. (f).) Because, in my view, this would include the names of officers involved in shootings, I do not agree that, even under the circumstances the majority posits, [section 6254, subdivision \(f\)](#), “generally require[s]” disclosure of the information the Times seeks.³ (Maj. opn., *ante*, at p. 64, 325 P.3d at p. 466.)

****474** The majority also makes several errors in evaluating the other side of the balance: the interests of the

officers in nondisclosure. Although relying principally on a heightened public interest in officer-involved shootings, the majority fails to consider or even acknowledge *the officer's* heightened privacy and safety interests in such cases. In this regard, *Commission on Peace Officer Standards*, on which the majority principally relies (maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), actually supports the Union. There, in holding that “the typical peace officer has [no] more than an insubstantial privacy interest in the fact of his or her employment as an officer” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 300, 64 Cal.Rptr.3d 661, 165 P.3d 462), the majority reasoned that the fact of employment is “innocuous information” (*id.* at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462) because “it would not reveal [the ***73 officer's] involvement in any particular case” (*id.* at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added). In this regard, the majority reasoned, disclosure of basic employment information is different from the disclosure sought in *Stone v. F.B.I.* (D.D.C.1990) 727 F.Supp. 662 (*Stone*): the names of FBI agents “who participated in the investigation of the assassination of Robert F. Kennedy.” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) In *Stone*, “[w]hat could reasonably be expected to constitute an unwarranted invasion of an agent's privacy is not that he or she is revealed as an FBI agent but that he or she is named as an FBI agent *who participated in the RFK investigation.*” [Citation.]” (*Commission on Peace Officer Standards, supra*, at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The “ ‘concern is not with the identifying information *per se*, but with the connection between such information and some other detail—a statement, an event, or otherwise—which the individual would not wish to be publicly disclosed.’ ” (*Ibid.*, quoting *Halloran v. Veterans Admin.* (5th Cir.1989) 874 F.2d 315, 321.) Here, the information the *82 Times seeks *would* reveal the participation of the named officers in “particular case[s]” and *would* reveal their connection to an event—a shooting—they may “ ‘not wish to be publicly disclosed.’ ” (*Commission on Peace Officer Standards, supra*, at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As the majority opinion in *Commission on Peace Officer Standards* establishes, the officers therefore have a heightened privacy interest in nondisclosure. Moreover, the potentially incendiary nature of the information the Times seeks—an officer's involvement in a shooting—further heightens an officer's already elevated privacy

interest in not being linked to “particular case[s].” (*Ibid.*) The majority errs in failing even to acknowledge this heightened interest.

Finally, the majority's conclusion that the Union's claim under section 6254, subdivision (c), fails for lack of a “particularized showing” regarding the need for confidentiality (maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468) is both erroneous and inconsistent with our prior decisions. The majority acknowledges both the existence and validity of the “safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting.” (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 469.) It also acknowledges that *the record contains evidence* of “‘potential retaliation/threats’ against officers involved in shootings.” (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469.) However, the majority finds this evidence too “vague” and insists that more is required; as to each officer whose name is to be withheld, there must be evidence to “establish” a “specific danger” to the officer or to the members of the officer's family. (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469.)

****475** The specificity of proof the majority demands is inconsistent with our decision in *Times Mirror Co. v. Superior Court* (1991) 53 Cal.3d 1325, 283 Cal.Rptr. 893, 813 P.2d 240 (*Times Mirror*). There, we held that, because of safety concerns, the Governor of California had properly refused to disclose his daily, weekly, and monthly appointment calendars and schedules. (*Id.* at pp. 1329, 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.) The only evidence supporting our conclusion was the declaration of the Governor's security director, which stated in the most general terms that disclosing this information “ ‘would seriously impair [his] ... ability to assure the Governor's security, and would constitute a potential threat to the Governor's safety, because the information ... will enable the ***74 reader to know in advance and with relative precision when and where the Governor may be found, those persons who will be with him, and when he will be alone.’ ” (*Id.* at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240, italics added.) Based on this evidence of a “ ‘potential threat to the Governor's safety’ ” (*ibid.*), and without requiring evidence of a particular or “specific” threat (maj. opn., *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468), we concluded that, even as to “outdated calendars and schedules,” nondisclosure was justified because “it is plausible to believe that an individual intent on doing

harm [to the Governor] could use such information to discern activity patterns of the Governor and identify areas of particular vulnerability.” (*Times Mirror, supra*, at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) Here, based on ***83** the Cox declaration, it is plausible to believe there are individuals, intent on doing harm to police officers in retaliation for their involvement in a shooting, who could use the requested information to exact revenge on the officers or members of their families. The “showing” in this case regarding safety concerns is certainly no more “vague,” and is at least as, if not more, “particularized” (maj. opn., *ante*, at p. 66, 325 P.3d at p. 469), than the showing we found sufficient in *Times Mirror*.⁴

The majority does not contend otherwise or explain why *Times Mirror* is inapplicable. Instead, in applying a different and far stricter standard, it simply ignores *Times Mirror*. It fails to explain why police officers and their family members are entitled to less protection than the Governor. Surely, their lives are not worth less. Nor is it less “plausible to believe” there are “individual[s] intent on doing harm” to police officers involved in shootings than it is to believe there are “individual[s] intent on doing harm” to the Governor. (*Times Mirror, supra*, 53 Cal.3d at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) On the contrary, as already noted, the majority acknowledges both the existence and validity of the “safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469.)

Contrary to the majority's suggestion (maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), *Commission on Peace Officer Standards and International Federation* are consistent with, and supportive of, this analysis. In neither case was there any evidence submitted regarding the alleged safety concerns, a circumstance the court stressed in refusing to apply a disclosure exemption. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462; *International Federation, supra*, 42 Cal.4th at pp. 337–338, 64 Cal.Rptr.3d 693, 165 P.3d 488.) Notably, after stating that “[a] mere assertion of possible endangerment” is insufficient to justify nondisclosure, the majority in *Commission on Peace Officer Standards* cited *Times Mirror* as a case in which *****75** disclosure ****476** was justified because *the evidence*—the “declaration of [the] Governor's security director”—“supported [the]

conclusion that release of his schedules would present a potential security threat.” (*Commission on Peace Officer Standards, supra*, at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As earlier explained, here, even more than in *Times Mirror*, evidence regarding the dangers of disclosure was submitted. Moreover, in *Commission on Peace Officer Standards*, the majority held that, on remand, nondisclosure as to officers in certain “categories” could be justified “because the safety or *84 efficacy of” officers in those categories “would be jeopardized by disclosure.” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 284, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The majority in *Commission on Peace Officer Standards* identified one such category: officers “operating undercover.” (*Id.* at p. 301, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The Times’s broad request for the names of all officers “involved in” shootings from January 1, 2005, until December 11, 2010, surely includes such officers. Moreover, the evidence in the record here establishes another category of officers whose safety would be jeopardized by disclosure: those who have been involved in a shooting.

Contrary to the majority’s suggestion, there is no basis for excluding from this category officers who, in using their weapons, “acted in a heroic manner that was unlikely to provoke retaliation.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 67, 325 P.3d at p. 469.) The majority asserts that safety is not “an issue” for such officers. (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 468.) But the majority fails to explain how to distinguish between heroic acts that are likely to provoke retaliation and those that are not. And it is naïve to believe that the desire for revenge of friends, family members, and gang associates of those shot by police will be reduced, much less eliminated, by the fact that the officers acted heroically. Indeed, the majority’s bald assertion will surely come as surprising news to the many officers who, having heroically used their weapons in confronting gang-related crime, face retaliation from other gang members. It simply is not true, as the majority asserts, that officer safety is “not ...

an issue” whenever a shooting may be characterized as “heroic” and “unlikely to provoke retaliation.” (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469) Of course, as to individual officers who do not perceive a safety threat to themselves or their families, and who do not oppose public recognition of their heroism, section 6254, subdivision (c), would not prevent disclosure. Releasing an officer’s name under those circumstances would not constitute “an unwarranted invasion of personal privacy.” (*Ibid.*)

Finally, there are good reasons for not requiring, as to each officer whose name is to be withheld, evidence of an actual and specific threat to the officer or the members of his or her family. Where, as here, the disclosure request covers all officer-involved shootings during a six-year period, requiring such individualized proof will impose an obvious and substantial burden on law enforcement agencies that want to protect their officers.⁵ More importantly, ***76 as the Union observes, “killers do not usually announce their intentions in advance.” Thus, in most cases, although the threat to officer safety is real, the *85 kind of evidence the majority demands is not available. Because the lives of our officers and their families are at stake, I would not require a law enforcement agency to wait until there is a specific threat—or worse, an actual attack—before allowing it to withhold information that puts its officers and their families at risk. Absent a showing of some greater public need for the information, we should allow law enforcement agencies to protect the very officers who are out there every day protecting us. They deserve at least that much for their brave service.

I therefore dissent.⁶

All Citations

59 Cal.4th 59, 325 P.3d 460, 172 Cal.Rptr.3d 56, 199 L.R.R.M. (BNA) 3501, 42 Media L. Rep. 2105, 14 Cal. Daily Op. Serv. 5853, 2014 Daily Journal D.A.R. 6795

Footnotes

* Retired Associate Justice of the Supreme Court, assigned by the Chief Justice pursuant to article VI, section 6 of the California Constitution.

1 The Times contends that it was not properly served with the Cox declaration. The Times does not, however, assert that it raised that issue in the trial court, and hence the issue appears to have been forfeited. In any case, as discussed below, the trial court concluded that the facts asserted in the Cox declaration were too general and speculative to support the

Union's request for injunctive relief. Therefore, any failure to properly serve the Cox declaration did not adversely affect the Times.

- 2 Both the trial court and the Court of Appeal rejected the Times's legal issue that [Government Code sections 6258 and 6259](#) set forth the exclusive means for litigating whether requested records must be disclosed and that therefore declaratory relief was inappropriate. (See *Filarsky v. Superior Court* (2002) 28 Cal.4th 419, 121 Cal.Rptr.2d 844, 49 P.3d 194 [holding that a city is not entitled to declaratory relief regarding its disclosure obligations under the California Public Records Act, but not deciding whether a third party—such as the Union here—is entitled to such relief].) We did not grant review to decide that legal issue, and we express no view on the matter. The issue remains open, and the Times can reassert it in any future proceedings.
- 1 All further unlabeled statutory references are to the Government Code.
- 2 The majority cites no legislative history to support its view of the “legislative policy” [Penal Code section 830.10](#) “reflects.” (Maj. opn., ante, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468.) The statute derives from its substantively identical predecessor, Penal Code former section 830.7, which provided: “Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of such officer.” (Stats.1969, ch. 1458, § 1, p. 2978.) In the only illuminating item of legislative history I could find—a letter to the Governor urging him to sign the passed bill containing the statute—the bill's legislative author stated that it would “aid[] morale in that it goes far to halt the deindividualization of our law enforcement personnel.” (Assemblyman John Miller, letter to Governor Ronald Reagan re Assem. Bill No. 1830 (1969 Reg. Sess.) Aug. 8, 1969, p. 1.) This letter does not support the majority's assertion.
- 3 The majority asserts that the disclosure exemption of [section 6254, subdivision \(f\)](#), does not apply because the requested information comes from a source other than “the records of any administrative or criminal investigation” of officer-involved shootings (maj. opn., ante, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469), perhaps “the initial incident reports” of such shootings (maj. opn., ante, at p. 61, 325 P.3d at p. 464). The appellate record offers no basis for the majority's speculation regarding the source of the requested information, as to either the Zerby shooting or any of the other officer-involved shootings that occurred during the six-year period the request identifies. Nor does the majority offer any legal basis for construing the broadly worded phrase “records relating to ... [¶] ... [¶] ... [e]mployee ... appraisal[] or discipline,” which defines one category of confidential personnel records under [Penal Code section 832.8, subdivision \(d\)](#), to apply narrowly “only” to “the records generated in connection with” officer appraisal or discipline (maj. opn., ante, at pp. 63–64, 325 P.3d at pp. 466–467). Had the Legislature intended to so limit the scope of confidentiality under this section, it easily could have used the majority's far narrower phrase.
- 4 Moreover, although there is a greater showing in this case regarding safety than in *Times Mirror*, the showing needed to justify nondisclosure here arguably is less than the showing that was needed in *Times Mirror*. Nondisclosure is proper under [section 6254, subdivision \(c\)](#), upon a showing that disclosure “would constitute an unwarranted invasion of personal privacy.” In *Times Mirror*, we held that nondisclosure was proper under [section 6255](#), which requires a showing that “on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record.” (Italics added; see *Times Mirror, supra*, 53 Cal.3d at pp. 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.)
- 5 For example, according to reported statistics, the Los Angeles Police Department averaged 70 officer-involved shootings per year for the years 2005–2008. (L.A. Police Dept., Use of Force Annual Report, p. 16 < [http:// www.lapdonline.org/assets/pdf/2009YearEndReportFinal.pdf](http://www.lapdonline.org/assets/pdf/2009YearEndReportFinal.pdf)> as of May 29, 2014.) In 42 officer-involved shootings internally reviewed in 2009 for compliance with department policy, “[t]here were 278 substantially involved officers,” 85 of whom “discharged their firearms.” (*Id.* at p. 19.)
- 6 Given my conclusion, I do not further address the majority's analysis regarding the applicability of the exemptions set forth in [Government Code section 6255](#) and [Penal Code sections 832.7 and 832.8](#).

 KeyCite Yellow Flag - Negative Treatment
Distinguished by [City and County of San Francisco v. Western Air Lines, Inc.](#), Cal.App. 1 Dist., May 28, 1962

33 Cal.2d 635, 204 P.2d 7

THE CITY OF NATIONAL CITY et al., Petitioners,

v.

GILBERT E. FRITZ, as City
Mayor, etc., et al., Respondents.

L. A. No. 20857.

Supreme Court of California

Mar. 22, 1949.

HEADNOTES

(1)

Municipal Corporations § 161--Funds--Capital Outlays. The term "utilities," as used in the statutory restriction on the use of a municipal fund established for capital outlays (Stats. 1937, p. 1995, Deering's Gen. Laws, Act 8496a) means "public utilities," and does not include sewers; hence such a fund may be used for the construction of sewers.

See 18 **Cal.Jur.** 870, 1076.

SUMMARY

PROCEEDING in mandamus to compel the signing of a contract and the transfer of a fund to meet payments thereunder. Writ granted.

COUNSEL

Burke, Marshall & Burke and Daniel G. Marshall for Petitioners.

Merideth L. Campbell, City Attorney, for Respondents.

CARTER, J.

The controversy in this proceeding involves the interpretation of a statute authorizing the establishment by municipal corporations of capital outlay funds (Stats. 1937, p. 1995, as amended last in 1945; Stats. 1945, p. 1867).

That act provides that the governing body of any city "empowered to levy and collect assessments or taxes

may by ordinance provide for the levy and collection of assessments or taxes for the creation and accumulation of a fund for capital outlays." The general limitation on the right to impose taxes applies. "At any time after the creation of such a fund such governing body may transfer to such fund any unincumbered surplus funds remaining on hand in such city, ... at the end of any fiscal year.

"Whenever such fund is created in the manner aforesaid it shall remain inviolate for the making of any capital outlays and no moneys shall be disbursed therefrom excepting for such a purpose;

*"The term 'capital outlays' shall not be construed to include the construction, acquisition, extensions of, or additions to, *636 utilities, other than utilities for the furnishing of water supply."* (Emphasis added.)

In the instant case the city council passed an ordinance purporting to create a capital outlay fund pursuant to the act. There is a dispute in regard to whether the ordinance in fact achieved that end inasmuch as it did not provide for the levy of taxes or assessments for the creation of the fund. It merely created the fund. But in view of the result reached herein, it is not necessary to resolve that question. From the receipts from sale of real property of the city to the United States, \$983,800.29 was ordered deposited in the fund by the city council and it is now there and unencumbered. The council has awarded contracts for the construction of sewers in the city in the sum of \$675,287.77 but respondent mayor of the city refuses to sign the contracts, and respondent clerk refuses to transfer said sum to the general fund to meet the payments under those contracts, claiming that moneys in the capital outlay fund cannot be used for sewer purposes under the above quoted act for the reason that a sewer is a utility as used in the last sentence dealing with things for which the fund cannot be used. Petitioners, on the other hand, take the position (among others) that a sewer is not a utility as that term is used in the act. With the latter contention we agree for the following reasons.

(1) The unqualified word "utility" has a broad meaning. It is defined as "quality or state of being useful; usefulness; profitableness to some desired end." (Webster's New Internat. Dict. (2d ed.) p. 2808.) (See also *Interstate National Gas Co. v. Gully*, 4 F.Supp. 697, 699.) If that definition were applied to the statute in question, there would be practically no activity in which the city could use

the money from the capital outlay fund because practically all of its property and public services are presumably for useful purposes. Thus the exception in the act (the italicized part thereof) for which funds may not be used would be broader than the main purpose of the act to authorize the creation of, and levy of taxes for, a capital outlay fund. Practically the only use that could be made of the fund would be for a water supply which is an exception carved out of an exception. These factors, coupled with the rule that exceptions in a statute are to be strictly construed (*Hurst v. City & County of San Francisco*, ante, p. 298 [201 P.2d 805]; *McAlpine v. Baumgartner*, 10 Cal.2d 409 [74 P.2d 753]; *Dufton v. Daniels*, 190 Cal. 577 [213 P. 949]; *Forbes v. City of Los Angeles*, 101 Cal.App. 781 [282 P. 528]; Crawford, Statutory Construction, § 299), require that the word "utility" be interpreted to mean a "public utility," for as will be seen, that term as used here has a more narrow meaning than "utility."

We are convinced that the construction and maintenance of a sewer system is not a "public utility" within the meaning of the act. Generally speaking statutes should be construed in the light of other statutes dealing with the same subject matter. (*In re Phyle*, 30 Cal.2d 838 [186 P.2d 134]; *Stillwell v. State Bar*, 29 Cal.2d 119 [178 P.2d 313].) The term "public utilities," with reference to the power of a municipal corporation to acquire and operate them, customarily embraces an enterprise which was usually engaged in by private corporations or individuals such as supplying water and electricity to the inhabitants. In this state it never has been the custom to have sewers operated privately. There was some doubt whether municipal corporations could acquire and operate such enterprises (public utilities) until the amendment to the Constitution (Cal. Const., art. XI, § 19) in 1911 authorizing such corporations to supply their inhabitants with light, water, power, heat, transportation and means of communications (18 Cal.Jur. 1076), but the power of municipal corporations to construct and maintain sewers has always been broad and unquestioned;

the power may be derived from the authority to construct and maintain streets. (See *Harter v. Barkley*, 158 Cal. 742 [112 P. 556]; *Kramer v. Los Angeles*, 147 Cal. 668 [82 P. 334]; *McBean v. City of Fresno*, 112 Cal. 159, 163 [44 P. 358, 53 Am.St.Rep. 191, 31 L.R.A. 794]; *City of Madera v. Black*, 181 Cal. 306, 313 [184 P. 397]). The Public Utilities Act of this state lists many activities as "public utilities" but no mention is made of sewers (Stats. 1915, p. 115, as amended).

For the foregoing reasons it is clear that the term "utilities" as used in the exception in the statute in question does not include sewers. The fund here involved may, therefore, be used for construction of sewers.

Let a peremptory writ of mandate issue as prayed for.

Gibson, C. J., Shenk, J., Traynor, J., Schauer, J., and Spence, J., concurred.

EDMONDS, J.

Again the court has rendered what I consider to be an advisory opinion in a collusive proceeding *638 brought by a city against two of its officers. The result is a decision which places the stamp of the highest judicial approval upon financial transactions which affect every taxpayer of the city without any truly adversary presentation of the merits of the controversy. Moreover, the construction of the statute authorizing the establishment of a capital outlay fund may now be the unquestioned basis for action by the governing body of other cities. For the reasons I have stated in *City of Whittier v. Dixon*, 24 Cal.2d 664, 668 [151 P.2d 5, 153 A.L.R. 956]; *City and County of San Francisco v. Boyd*, 22 Cal.2d 685, 707 [140 P.2d 666]; *City and County of San Francisco v. Linares*, 16 Cal.2d 441, 448 [106 P.2d 369], I believe that this procedure is contrary to fundamental principles of the administration of justice.



KeyCite Yellow Flag - Negative Treatment

Declined to Extend by *NCDR, L.L.C. v. Mauze & Bagby, P.L.L.C.*, 5th Cir.(Tex.), March 11, 2014

49 Cal.4th 12

Supreme Court of California

SIMPSON STRONG–TIE COMPANY,
INC., Plaintiff and Appellant,

v.

Pierce GORE et al., Defendants and Respondents.

No. S164174.

|

May 17, 2010.

Synopsis

Background: Manufacturer of name-brand galvanized screws brought claims for defamation, trade libel, false advertising, and unfair business practices against attorney, relating to attorney's newspaper advertisement stating that owners of wood decks, built with certain brand-name galvanized screws, “may” have legal rights to compensation or other relief. The Superior Court, Santa Clara County, No. CV057666, *John F. Herlihy, J.*, granted attorney's special motion to strike under the anti-SLAPP (strategic lawsuit against public participation) statute. Manufacturer appealed. The Court of Appeal affirmed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, *Baxter, J.*, held that:

[1] plaintiff has burden of establishing the applicability of a statutory exemption from anti-SLAPP statute, disapproving *Brill Media Co., LLC v. TCW Group, Inc.*, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371, and

[2] “commercial speech” exemption from anti-SLAPP statute was inapplicable.

Affirmed.

Opinion, 76 Cal.Rptr.3d 292, superseded.

West Headnotes (16)

[1] Pleading**➤ Frivolous pleading**

For purposes of anti-strategic lawsuit against public participation (SLAPP) statute, a “SLAPP” is a civil lawsuit that is aimed at preventing citizens from exercising their political rights or punishing those who have done so. *West's Ann.Cal.C.C.P. § 425.16.*

48 Cases that cite this headnote

[2] Pleading**➤ Frivolous pleading**

The commercial speech exemption, like the public interest exemption, is a statutory exception to the anti-strategic lawsuit against public participation (SLAPP) statute and should be narrowly construed. *West's Ann.Cal.C.C.P. §§ 425.16, 425.17(b, c).*

11 Cases that cite this headnote

[3] Pleading**➤ Application and proceedings thereon**

The plaintiff has the burden of establishing the applicability of the “commercial speech” statutory exemption from the anti-strategic lawsuit against public participation (SLAPP) statute, in opposing the defendant's anti-SLAPP motion; disapproving *Brill Media Co., LLC v. TCW Group, Inc.*, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371. *West's Ann.Cal.C.C.P. § 425.17(c); West's Ann.Cal.Evid.Code § 500.*

63 Cases that cite this headnote

[4] Contracts**➤ Presumptions and burden of proof****Statutes****➤ Burden of proof**

It is a legal principle that when a proviso carves an exception out of the body of a

statute or contract those who set up such exception must prove it.

[3 Cases that cite this headnote](#)

[5] Statutes

🔑 [Burden of proof](#)

The enactment of the statute providing that except as otherwise provided by law, “a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting,” did not upset the traditional rule of statutory construction that when a proviso carves an exception out of the body of a statute or contract those who set up such exception must prove it. [West's Ann.Cal.Evid.Code § 500](#).

[8 Cases that cite this headnote](#)

[6] Evidence

🔑 [Elements of cause of action or claim](#)

Evidence

🔑 [Matters of Defense and Rebuttal](#)

The general principle of the statute providing that except as otherwise provided by law, “a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting,” is that a party who seeks a court's action in his favor bears the burden of persuasion thereon. [West's Ann.Cal.Evid.Code § 500](#).

[6 Cases that cite this headnote](#)

[7] Evidence

🔑 [Nature and scope in general](#)

The ordinary rules governing allocation of the burden of proof may be disregarded for policy reasons in exceptional circumstances, yet such exceptions are few, and narrow, and the reasons justifying a shift in the normal allocation of the burden of proof must be compelling.

[3 Cases that cite this headnote](#)

[8] Pleading

🔑 [Frivolous pleading](#)

The “commercial speech” exemption from the anti-strategic lawsuit against public participation (SLAPP) statute does not prescribe “content” and “delivery” exemptions with distinctly different elements. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

[8 Cases that cite this headnote](#)

[9] Statutes

🔑 [Purpose and intent](#)

In any case involving statutory interpretation, the court's fundamental task is to determine the Legislature's intent so as to effectuate the law's purpose.

[1 Cases that cite this headnote](#)

[10] Statutes

🔑 [Language and intent, will, purpose, or policy](#)

Statutes

🔑 [Literal, precise, or strict meaning;letter of the law](#)

Statutes

🔑 [Unintended or unreasonable results; absurdity](#)

Statutes

🔑 [Relation to plain, literal, or clear meaning;ambiguity](#)

In construing a statute, courts begin with the text of the statute as the best indicator of legislative intent but courts may reject a literal construction that is contrary to the legislative intent apparent in the statute or that would lead to absurd results.

[9 Cases that cite this headnote](#)

[11] Pleading

🔑 [Frivolous pleading](#)

Statements or conduct made during the delivery of goods or services would qualify as statements or conduct made “in the course of” delivering goods or services, within meaning of the “commercial speech” statutory exemption from the anti-strategic lawsuit against public participation (SLAPP) statute. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

[35 Cases that cite this headnote](#)

[12] Pleading

🔑 Frivolous pleading

The “commercial speech” exemption from the anti-strategic lawsuit against public participation (SLAPP) statute exempts a cause of action arising from commercial speech when (1) the cause of action is against a person primarily engaged in the business of selling or leasing goods or services; (2) the cause of action arises from a statement or conduct by that person consisting of representations of fact about that person's or a business competitor's business operations, goods, or services; (3) the statement or conduct was made either for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services or in the course of delivering the person's goods or services; and (4) the intended audience for the statement or conduct meets the definition set forth in the statute. [West's Ann.Cal.C.C.P. § 425.17\(c\)](#).

[45 Cases that cite this headnote](#)

[13] Pleading

🔑 Frivolous pleading

Galvanized screw manufacturer's claims against attorney for defamation, trade libel, false advertising, and unfair business practices, relating to attorney's newspaper advertisement stating that owners of wood decks built with the screws “may” have legal rights to compensation or other relief, did not arise from representations of fact about attorney's “business operations, goods,

or services,” and thus were not within the “commercial speech” exemption from the anti-strategic lawsuit against public participation (SLAPP) statute; even if the advertisement created the inference that attorney had investigated manufacturer, any implication that manufacturer's screws were defective was a representation about manufacturer's products rather than about attorney's business operations. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

See Cal. Civil Practice (Thomson Reuters 2010) Civil Rights Litigation, § 14:10; 5 Witkin, Cal. Procedure (5th ed. 2008) Pleading, § 1026; Weil & Brown, Cal. Practice Guide: Civil Procedure Before Trial (The Rutter Group 2009) ¶ 7:555 et seq. (CACIVP Ch. 7(II)-B); Cal. Jur. 3d, Constitutional Law, § 270.

[5 Cases that cite this headnote](#)

[14] Pleading

🔑 Frivolous pleading

The representation that an attorney would investigate “whether you have a potential claim,” in attorney's newspaper advertisement seeking potential plaintiffs for class action against galvanized screw manufacturer, did not constitute a representation of fact about attorney's business operations, goods, or services, and thus was not within the commercial speech exemption to the anti-strategic lawsuit against public participation (SLAPP) law; the statement was not a representation of fact, but an agreement to take certain actions in the future. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

[3 Cases that cite this headnote](#)

[15] Pleading

🔑 Frivolous pleading

Under the “commercial speech” exemption from the anti-strategic lawsuit against public participation (SLAPP) statute the statement or conduct giving rise to the cause of action must consist of factual representations about

the speaker's or a competitor's goods, services, or business operations; it would not be sufficient for the statement giving rise to the cause of action to appear in the same publication as factual representations about the speaker's or a competitor's business. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

[24 Cases that cite this headnote](#)

[16] Pleading

🔑 Frivolous pleading

A party should not be able to defeat the commercial speech exception to the anti-strategic lawsuit against public participation (SLAPP) statute by parsing a two-sentence advertisement into its component parts; the proper test does not turn on the punctuation used in the advertisement, but on the basis for the cause of action. [West's Ann.Cal.C.C.P. § 425.17\(c\)\(1\)](#).

[1 Cases that cite this headnote](#)

Attorneys and Law Firms

***332 Shartsis Friese, [Arthur J. Shartsis](#), [Erick C. Howard](#), San Francisco; Eisenberg and Hancock, [Jon B. Eisenberg](#) and [William N. Hancock](#), San Francisco, for Plaintiff and Appellant.

Davis Wright Tremaine, [Thomas R. Burke](#), San Francisco, and [Rochelle L. Wilcox](#), Los Angeles, for Defendants and Respondents.

Arkin & Glovsky, Pasadena, and Sharon Arkin for Consumer Attorneys of California as Amicus Curiae on behalf of Defendants and Respondents.

Levy, Ram & Olson and [Karl Olson](#), San Francisco, for Senator Sheila Kuehl and California First Amendment Coalition as Amici Curiae on behalf of Defendants and Respondents.

Opinion

[BAXTER, J.](#)

*16 **1120 In this case we consider the scope of the commercial speech exemption to the anti-SLAPP statute. (See [Code Civ. Proc., §§ 425.16, 425.17, subd. \(c\)](#).)¹

In February 2006, plaintiff Simpson Strong-Tie Company, Inc. (Simpson) filed this action for defamation and related claims against defendants Pierce Gore and The Gore Law Firm arising from a newspaper advertisement placed by Gore a few weeks earlier. The advertisement, which was directed to owners of wood decks constructed after January 1, 2004, advised readers that “you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck” if the deck was built with galvanized screws manufactured by Simpson or other specified entities, and invited those persons to contact Gore “if you would like an attorney to investigate whether you have a potential claim.”

*17 Gore moved successfully in the superior court to have the entire complaint stricken under [section 425.16](#), the anti- ***333 SLAPP statute, and the Court of Appeal affirmed. We granted review to consider the limited issue whether Simpson's complaint was exempt from the anti-SLAPP statute because of [section 425.17, subdivision \(c\) \(section 425.17\(c\)\)](#), which excludes causes of action arising from representations of fact about the speaker's or a competitor's “business operations, goods, or services ... made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” or “made in the course of delivering the person's goods or services.” Having found that the complaint is not exempt from dismissal under the anti-SLAPP statute, we affirm.

BACKGROUND

Plaintiff Simpson is a California corporation in the business of designing, manufacturing, and marketing building products, including metal connectors and other hardware for use in wood frame construction. According to Simpson, it is well known in the wood frame construction industry that pressure-treated wood, which is commonly used in outdoor decks to protect against termites and fungal decay, can have a corrosive effect on steel products, including galvanized screws. Corrosion potentially shortens the service life of these fasteners and connectors and compromises their ability to support their

recommended loads or endure seismic and environmental stresses.

In early 2004, at the recommendation of the United States Environmental Protection Agency, the construction industry stopped selling lumber treated with chromium copper arsenate, due to health hazards posed by its arsenic content. Alternative lumber products, such as wood treated with alkaline copper quaternary and copper azole, were substituted, but, as Simpson explains, these chemicals are “more corrosive” to galvanized steel products. Simpson states that it communicated this potential problem to the building industry and to the public generally through its Web site, annual catalog, articles in engineering and building magazines, bulletins issued to the building industry, point-of-sale information, and annual report.

Gore, a California attorney, learned from television reports about the potential for corrosion of galvanized deck fasteners and connectors when used on wood pressure treated with alkaline copper quaternary or copper azole, and contacted Ted Todd, a senior inspector with the Contra Costa *18 County District Attorney's Office who was featured in the television reports. At that time, the district attorney's office was conducting an investigation into the risk posed by galvanized fasteners and connectors when used with these types of pressure-treated wood. The office ultimately issued a “Consumer Alert” warning of the corrosive effect of the **1121 new pressure-treated wood products “on the metal connector brackets typically used in construction.” The alert noted that advisories had been posted in some retail stores about the potential incompatibility of the two products but cautioned that the advisories “tend to be in very small print or somewhat inconspicuously posted.”

Gore also visited the company Web site, where Simpson had advised in bold type that “[m]any of the new Pressure Treated Woods use chemicals that are corrosive to steel. By selecting connectors that offer greater corrosion resistance ... you can extend the service life of your connectors. However, corrosion will still occur. You should perform periodic inspection of your connectors and fasteners to insure their strength is not being adversely affected by corrosion. In some cases, it may be necessary to have a local professional perform ***334 the inspections. Because of the many variables involved,

Simpson Strong-Tie cannot provide estimates on service life of connectors, anchors or fasteners.”

In addition, Gore discovered that a class action complaint had been filed in Massachusetts against one of Simpson's competitors, Phillips Fastener Products, Inc., which sought relief on behalf of consumers allegedly damaged by defective galvanized fasteners and connectors used with pressure-treated lumber, and that Gore's former law firm, Lieff, Cabraser, Heimann & Bernstein, LLP, was investigating claims that some of the newly designed fasteners were failing, in spite of the manufacturers' representations that the “special coatings” were intended to resist corrosion.

Based on this information, Gore arranged for an advertisement to be placed in the San Jose Mercury News in order to locate individuals who had purchased galvanized fasteners and connectors manufactured by Simpson and two other companies, which together were responsible for most of the metal fasteners sold to consumers in California. The advertisement, which commenced Christmas Day 2005 and ran four more times over a 28-day period in the Mercury News and once in the Los Gatos Weekly-Times, read as follows:

*19

ATTENTION:

WOOD DECK OWNERS

If your deck was built after January 1, 2004 with galvanized screws manufactured by Phillips Fastener Products, Simpson Strong-Tie or Grip-Rite, you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck.

Please call if you would like an attorney to investigate whether you have a potential claim:

Pierce Gore
GORE LAW FIRM
900 East Hamilton Ave.
Suite 100 Campbell, CA 95008
408-879-7444

Gore has asserted that the wording of the advertisement was modeled after notices he or his cocounsel had used in this state and in others during the preceding three years in connection with potential class actions based on consumer fraud or product defects.

**1122 In a letter dated January 9, 2006, counsel for Simpson advised Gore that the advertisement falsely implied that Simpson's galvanized screws fail to meet

appropriate industry standards and that a valid claim may exist against Simpson based upon negligence or product liability. The letter demanded that Gore cease publication of any further defamatory advertisements directed at Simpson and reserved Simpson's right to recover against Gore for any costs ***335 or damages that may have already resulted from this or any similar publication. Gore did not respond to the letter. In a letter dated January 27, 2006, counsel for Simpson declared that Gore's failure to respond "suggests that your claims are without merit, and that your newspaper advertisement is false, misleading, and defames Simpson.... Unless you can present specific evidence to support your charges, Simpson intends to pursue its defamation claim against your firm[] and vindicate its rights." Again, Gore did not respond.

Prior to filing this action, Simpson retained an opinion survey firm to confirm that the advertisement had caused injury to Simpson's reputation. The survey firm intercepted 214 randomly selected shoppers at nine different *20 home improvement stores in January and February 2006 and obtained their responses to a set of questions with and without exposure to the Gore advertisement. The survey revealed that the shoppers, after reading the advertisement, were significantly more likely to believe that Simpson's galvanized screws were defective or of low quality and were significantly less likely to purchase galvanized screws manufactured by Simpson.

Two days after the survey was completed, Simpson filed this action for defamation, trade libel, false advertising, and unfair business practices. The complaint sought compensatory and punitive damages as well as injunctive relief.

When Gore moved to strike the complaint under section 425.16, Simpson invoked the exemption to the anti-SLAPP law for commercial speech under section 425.17(c). The trial court granted the special motion to strike and entered a judgment of dismissal, finding Gore had made a threshold showing that the statements were made in furtherance of his right of petition or free speech on an issue of public interest (§ 425.16, subd. (e)(4)), that Simpson had failed to demonstrate a probability of prevailing on the merits (§ 425.16, subd. (b)(1)), and that the commercial speech exemption did not apply because the advertisement made no statement about a business competitor's products or services.

The Court of Appeal affirmed in a published opinion. The court first considered "who bears the burden of persuasion with respect to the applicability of [the section 425.17(c)] exemption—the party invoking the anti-SLAPP law (i.e., the defendant), or the party invoking the exemption (the plaintiff)?" In assigning the burden to the plaintiff, the Court of Appeal disagreed with *Brill Media Co., LLC v. TCW Group, Inc.* (2005) 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371 (*Brill*), which had assigned the burden to the defendant to establish that the cause of action is *not* exempt. The court next determined that while the advertisement was "made for the purpose of ... promoting ... [Gore's] services" (§ 425.17(c)(1)), Simpson's causes of action did not "aris[e] from" any representation of fact " 'about' Gore's or a competitor's services or business operations."

In construing the exemption in section 425.17(c)(1) for causes of action arising from statements or conduct "made in the course of delivering the person's goods or services," the Court of Appeal once again disagreed with *Brill*, which had found this prong was satisfied where "the statements were made and conduct engaged in as part of....the type of business transaction engaged in by defendants." (*Brill, supra*, 132 Cal.App.4th at p. 341, 33 Cal.Rptr.3d 371.) The Court of Appeal reasoned that the Legislature had enacted instead "a much narrower exemption, predicated by its plain terms on conduct in the course of *21 delivering the goods or services the defendant is in the business of selling or ***336 leasing." The court then found that the advertisement here "was seeking business from prospective clients, not delivering services to them." Concluding that the anti-SLAPP statute applied and that Simpson had failed to establish a probability **1123 of prevailing on any of its claims, the Court of Appeal affirmed the order granting the special motion to strike and the judgment of dismissal.

We granted review to address the conflict in the case law concerning the construction of the commercial speech exemption to the anti-SLAPP statute.

DISCUSSION

[1] A SLAPP is a civil lawsuit that is aimed at preventing citizens from exercising their political rights or punishing those who have done so. " 'While SLAPP suits masquerade as ordinary lawsuits such as defamation

and interference with prospective economic advantage, they are generally meritless suits brought primarily to chill the exercise of free speech or petition rights by the threat of severe economic sanctions against the defendant, and not to vindicate a legally cognizable right.’” (*Castillo v. Pacheco* (2007) 150 Cal.App.4th 242, 249–250, 58 Cal.Rptr.3d 305, quoting Sen. Com. on Judiciary, Analysis of Sen. Bill No. 1296 (1997–1998 Reg. Sess.) as amended May 12, 1997, pp. 1–2.)

In 1992, out of concern over “a disturbing increase” in these types of lawsuits, the Legislature enacted [section 425.16](#), the anti-SLAPP statute. (§ 425.16, subd. (a).) The statute authorized the filing of a special motion to strike to expedite the early dismissal of these unmeritorious claims. (§ 425.16, subds. (b)(1), (f).) To encourage “continued participation in matters of public significance” and to ensure “that this participation should not be chilled through abuse of the judicial process,” the Legislature expressly provided that the anti-SLAPP statute “shall be construed broadly.” (§ 425.16, subd. (a).)

A special motion to strike involves a two-step process. First, the defendant must make a prima facie showing that the plaintiff’s “cause of action ... aris[es] from” an act by the defendant “in furtherance of the [defendant’s] right of petition or free speech ... in connection with a public issue.”² (§ 425.16, subd. (b)(1).) If a defendant meets this threshold showing, the cause of action shall be stricken unless the plaintiff can establish “a probability that the plaintiff will prevail on the claim.” (*Ibid.*)

In 2003, concerned about the “disturbing abuse” of the anti-SLAPP statute, the Legislature enacted [section 425.17](#) to exempt certain actions from it. *22 (§ 425.17, subd. (a).) We recently discussed the exemption for public interest lawsuits in *Club Members for an Honest Election v. Sierra Club* (2008) 45 Cal.4th 309, 86 Cal.Rptr.3d 288, 196 P.3d 1094, where we “narrowly construed” [section 425.17, subdivision \(b\)](#) and held that it applied “only when the entire action is brought in the public interest.” (*Club Members for an Honest Election, supra*, 45 Cal.4th at pp. 312, 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094.)

This case involves the scope and operation of the exemption for commercial speech under [section 425.17\(c\)](#), which provides: “[Section 425.16](#) does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods

or services, including, but not limited to, insurance, securities, or financial instruments, arising from any statement or conduct by that person if both of the following conditions exist: [¶] ***337 (1) The statement or conduct consists of representations of fact about that person’s or a business competitor’s business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person’s goods or services, or the statement or conduct was made in the course of delivering the person’s goods or services. [¶] (2) The intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or prospective buyer or customer, ...”

[2] The commercial speech exemption, like the public interest exemption, “is a statutory exception to [section 425.16](#)” and “should be narrowly construed.” (*Club Members for an Honest Election v. Sierra Club, supra*, 45 Cal.4th at p. 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094; see also **1124 *Major v. Silna* (2005) 134 Cal.App.4th 1485, 1494, 36 Cal.Rptr.3d 875; accord, Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, pp. 7–8 [“before us for consideration in [Senate Bill] 515 is a measure that seeks to trim off a few bad branches as argued and identified by the [Consumer Attorneys of California]”].)

A. Which Party Bears the Burden to Establish the Applicability of the “Commercial Speech” Exemption Under [Section 425.17\(c\)](#)?

[3] The Court of Appeal determined that Simpson, as the plaintiff, bore the burden of establishing that Gore’s advertisement fell within the commercial speech exemption to the anti-SLAPP law, relying on the general rule that “[o]ne claiming an exemption from a general statute has the burden of proving that he comes within the exemption.” Simpson argues that the burden should have been placed on Gore, as the defendant, to establish that the exemption does *not* apply. He relies in particular on our summary in *Equilon Enterprises v. Consumer Cause, Inc.* (2002) 29 Cal.4th 53, 67, 124 Cal.Rptr.2d 507, 52 P.3d 685 (*Equilon*), of the “two-step process” for *23 analyzing anti-SLAPP motions: “First, the court decides whether the *defendant* has made a threshold showing that the challenged cause of action is one arising from protected activity.... If the court finds such a showing has been made, it then determines whether the *plaintiff*

has demonstrated a probability of prevailing on the claim.” (Italics added.) We agree with the Court of Appeal’s construction.

[4] It is a “familiar” and “longstanding” legal principle that “[w]hen a proviso ... carves an exception out of the body of a statute or contract those who set up such exception must prove it.” (*Meacham v. Knolls Atomic Power Laboratory* (2008) 554 U.S. 84, 128 S.Ct. 2395, 2400, 171 L.Ed.2d 283; see also *Trade Comm’n v. Morton Salt Co.* (1948) 334 U.S. 37, 44–45, 68 S.Ct. 822, 92 L.Ed. 1196 [“the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits ...”]; accord, 29 Am.Jur.2d (2008) Evidence § 176, p. 193.) Likewise, in California, “it has been declared that where the statute has exemptions, exceptions or matters which will avoid the statute the burden is on the claimant to show that he falls within that category.” (*Colonial Ins. Co. v. Ind. Acc. Com.* (1945) 27 Cal.2d 437, 441, 164 P.2d 490; see also *Briggs v. McCullough* (1869) 36 Cal. 542, 551–552; *In re Lorenzo C.* (1997) 54 Cal.App.4th 1330, 1345, 63 Cal.Rptr.2d 562 [“one who claims an exemption from a general statute has the burden of proving that he or she comes within the exemption”].)

***338 Simpson does not dispute that section 425.16 sets forth a general statute or that section 425.17 creates specified exemptions to it. Simpson contends, though, that the familiar and long-standing rule of statutory construction governing exemptions to a general statute was abrogated by the enactment in 1965 of Evidence Code section 500, which provides: “Except as otherwise provided by law, a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting.”

[5] Although it is true that Evidence Code section 500 superseded former section 1981, which had provided that the burden of proof was on the party holding the affirmative of the issue, the change in wording did not upset the traditional rule of statutory construction. As the Law Revision Commission Comments to Evidence Code section 500 explain, the phrase the “ ‘affirmative of the issue’ ” in former section 1981 had been criticized “as establishing a meaningless standard,” inasmuch as “ ‘practically any proposition may be stated in either affirmative or negative form.’ ” (Cal. Law Revision Com. com., reprinted at 29B West’s Ann. Evid.Code (1995

ed.) foll. § 500, p. 554.) Evidence Code section 500 was intended to make the allocation of the burden of proof “easier to ascertain” than the “classic formulation,” but *24 not to signal a sea change in the law. (*Conservatorship of Hume* (2006) 140 Cal.App.4th 1385, 1388, fn. 5, 44 Cal.Rptr.3d 906; see also *Los Angeles Unified School Dist. v. Workers’ Comp. Appeals Bd.* (1984) 150 Cal.App.3d 823, 829, 198 Cal.Rptr. 116 [citing the two formulations together].) Tellingly, Simpson **1125 cites nothing to support its novel claim that Evidence Code section 500 abrogated the ordinary rule of statutory construction. (Cf. 31 Cal.Jur.3d (2002) Evidence § 90, p. 151 [“What facts are essential to a particular party’s claim for relief or defense is generally a matter to be determined by the substantive law, not the law of evidence; Evid.Code, § 500 does not purport to determine which facts are ‘essential’ to the plaintiff’s claim for relief and which facts are ‘essential’ to a claimed defense, but rather leaves those substantive determinations to be resolved in light of the particular cause of action or defense at issue,” (fns. omitted)].) Indeed, the Law Revision Commission Comments note that Evidence Code section 500 “follows th[e] basic rule”—i.e., “ ‘that whatever facts a party must affirmatively plead he also has the burden of proving’ ”—and is even broader, in that it “ appl[ies] to issues not necessarily raised in the pleadings.” (Cal. Law Revision Com. com., reprinted at 29B West’s Ann. Evid.Code, *supra*, foll. § 500, p. 554.) Inasmuch as Simpson concedes that “[t]he initial burden should be on the plaintiff to invoke the exemption in opposition to the anti-SLAPP motion,” it follows that the plaintiff also has the burden of proving the applicability of the exemption.

[6] Furthermore, the “general principle” of Evidence Code section 500 is “that a party who seeks a court’s action in his favor bears the burden of persuasion thereon.” (*Aguilar v. Atlantic Richfield Co.* (2001) 25 Cal.4th 826, 850, 107 Cal.Rptr.2d 841, 24 P.3d 493.) Because establishing the commercial speech exemption is essential to Simpson’s defense to the special motion to strike, Evidence Code section 500 places the burden of proof on Simpson. (See generally *City of Lafayette v. East Bay Mun. Utility Dist.* (1993) 16 Cal.App.4th 1005, 1017, 20 Cal.Rptr.2d 658 [“ ‘ ‘One seeking to be excluded from the sweep of the general statute must establish that the exception applies’ ”].)

Nothing in *Equilon* or its discussion of the “two-step process” alters the analysis. (*Equilon, supra*, 29 Cal.4th

at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In *Equilon*, ***339 we explained that the defendant has the burden to show that the cause of action being challenged under the anti-SLAPP statute is one arising from protected activity. (*Equilon, supra*, at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In discussing the defendant's burden at the first stage, *Equilon* construed only section 425.16, and did not purport to identify the party with the burden to establish the existence or nonexistence of the public interest exemption in section 425.17, subdivision (b), or the commercial speech exemption in section 425.17(c), inasmuch as *Equilon* predated the enactment of section 425.17. It is worth noting, though, that *25 nothing in *Equilon* purported to abrogate the long-standing rule of construction that the party seeking to benefit from an exception to a general statute bears the burden to establish the exception.³

[7] Simpson argues, correctly, that the ordinary rules governing allocation of the burden of proof may be disregarded for policy reasons in exceptional circumstances. (*Adams v. Murakami* (1991) 54 Cal.3d 105, 119–120, 284 Cal.Rptr. 318, 813 P.2d 1348; *Cassady v. Morgan, Lewis & Bockius LLP* (2006) 145 Cal.App.4th 220, 234, 51 Cal.Rptr.3d 527 (*Cassady*).) Yet such exceptions are “few, and narrow” (*Sargent Fletcher, Inc. v. Able Corp.* (2003) 110 Cal.App.4th 1658, 1670, 3 Cal.Rptr.3d 279), and the reasons justifying a shift in the normal allocation of the burden of proof must be “compelling.” **1126 (*Aydin Corp. v. First State Ins. Co.* (1998) 18 Cal.4th 1183, 1193, 77 Cal.Rptr.2d 537, 959 P.2d 1213; accord, *Meacham v. Knolls Atomic Power Lab., supra*, 554 U.S. at pp. 90–92, 128 S.Ct. at p. 2400.) Simpson fails to identify any compelling justification.

Simpson does assert that the facts underlying the commercial speech exemption are “peculiarly” within the speaker's knowledge. But Simpson does not explain how a plaintiff would be significantly disadvantaged in demonstrating that the statement or conduct underlying its cause of action “consists of representations of fact about [the defendant]'s or a business competitor's business operations, goods, or services”; that the defendant's statement or conduct was “made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” or “in the course of delivering the persons' goods or services”; or that the “intended audience” was “an actual or potential buyer or customer,

or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer.” (§ 425.17(c)(1), (2); see generally *Schaffer v. Weast* (2005) 546 U.S. 49, 60, 126 S.Ct. 528, 163 L.Ed.2d 387 [“ ‘Very often one must plead and prove matters as to which his adversary has superior access to the proof’ ”].) In sum, Simpson does not persuade us that section 425.17(c) presents ***340 one of those “ ‘rare occasions’ ” *26 justifying a deviation from the normal allocation of the burden of proof. (*Cassady, supra*, 145 Cal.App.4th at p. 234, 51 Cal.Rptr.3d 527.)

The burden of proof as to the applicability of the commercial speech exemption, therefore, falls on the party seeking the benefit of it—i.e., the plaintiff.

B. Were Simpson's Causes of Action Exempted from the Anti-SLAPP Statute by Section 425.17(c)?

As noted, section 425.17(c) provides, in pertinent part: “Section 425.16 does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods or services ... arising from any statement or conduct by that person if both of the following conditions exist: [¶] (1) The statement or conduct consists of representations of fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services, or the statement or conduct was made in the course of delivering the person's goods or services. [¶] (2) The intended audience is an actual buyer or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual buyer or customer....”

There are no disputed issues of fact here. We review the applicability of the commercial speech exemption independently. (*Soukup v. Law Offices of Herbert Hafif* (2006) 39 Cal.4th 260, 269, fn. 3, 46 Cal.Rptr.3d 638, 139 P.3d 30.)

[8] The Court of Appeal held, and the parties' initial briefing assumed, that section 425.17(c)(1) prescribes a “content exemption” and a “delivery exemption” and that these exemptions have distinctly different elements. The content exemption shields a cause of action from the anti-SLAPP statute if the cause of action arises from a statement or conduct that “consists of representations of

fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services.” (§ 425.17, subd. (c)(1).) The delivery exemption provides a similar shield for *any* statement or conduct “made in the course of delivering the person's goods or services.” (*Ibid.*) In other words, this approach divided the first 47 words of subdivision (c)(1) from the last 17 to create two independent and parallel theories of exemption from the anti-SLAPP law.

Although section 425.17(c)(1) is grammatically susceptible of such a construction, that construction was not necessarily the only plausible one. *27 Gore had observed, in a footnote in its initial briefing, that the statute might also be read to exempt a cause of action arising from a statement or conduct **1127 that consists of representations of fact about that person's or a competitor's business operations, goods, or services that was made *either* “for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” *or* “in the course of delivering the person's goods or services.” (§ 425.17(c)(1).) We granted the parties the opportunity to file supplemental briefing as to which construction was the correct one and, as will appear, agree with Gore's construction.

[9] [10] As in any case involving statutory interpretation, our fundamental task is to determine the Legislature's intent so as to effectuate the law's purpose. ***341 (*People v. Lewis* (2008) 43 Cal.4th 415, 491, 75 Cal.Rptr.3d 588, 181 P.3d 947.) “We begin with the text of the statute as the best indicator of legislative intent” (*Tonya M. v. Superior Court* (2007) 42 Cal.4th 836, 844, 69 Cal.Rptr.3d 96, 172 P.3d 402), but we may reject a literal construction that is contrary to the legislative intent apparent in the statute or that would lead to absurd results. (*Ornelas v. Randolph* (1993) 4 Cal.4th 1095, 1105, 17 Cal.Rptr.2d 594, 847 P.2d 560.)

Simpson's argument, at least at the outset, relies on the plain language of section 425.17(c)(1) and the canon of construction of avoiding surplusage. According to Simpson, section 425.17(c)(1) creates two independent commercial speech exemptions, each introduced by the phrase “the statement or conduct,” and to hold otherwise would render the second iteration of “the statement or

conduct” in the subdivision redundant. In Simpson's view, therefore, the delivery exemption encompasses a cause of action arising from “*any* statement or conduct made in the course of delivering the person's goods or services.” Gore argues that such a construction would contravene the legislative intent and lead to absurd results.

The Legislature's findings supporting the enactment of section 425.17 are set forth in subdivision (a), which states that “there has been a disturbing abuse of Section 425.16, the California Anti-SLAPP Law, which has undermined the exercise of the constitutional rights of freedom of speech and petition for the redress of grievances, contrary to the purpose and intent of Section 425.16. The Legislature finds and declares that it is in the public interest to encourage continued participation in matters of public significance, and that this participation should not be chilled through abuse of the judicial process or Section 425.16.”

The construction favored by Simpson does not effectively fulfill the statute's purposes. Under that construction, the Legislature can be seen to have carefully devised specific requirements in order to exempt a cause of *28 action under the content prong—i.e., the statement or conduct underlying the cause of action must (1) consist of representations of fact (2) about that person's or a business competitor's business operations, goods, or services, and (3) have been made for the purpose of obtaining approval for, promoting, or securing transactions in the person's goods or services. Yet, under Simpson's construction of the delivery prong, the Legislature apparently imposed no particular requirements—i.e., a cause of action arising from *any* statement or conduct on *any* subject for *any* purpose is exempted from the anti-SLAPP statute, as long as it was made in the course of delivering goods or services. Simpson has not offered any rationale for why the stage of the transaction should play such a critical factor in determining whether to exempt a cause of action from the reach of the anti-SLAPP law.

Moreover, under Simpson's approach, a business that was sued because of political or religious statements made by an employee *in the course of delivering* the product or service to a customer would be deprived of the protection of the anti-SLAPP law, but that same business would be able to invoke the anti-SLAPP law if the same statements were made for the purpose of obtaining approval for, promoting, or securing transactions in its

products. Neither the Legislature's findings nor common sense endorses or justifies such a result.

[11] Simpson effectively concedes that such a result would be problematic, but argues that the statements in these hypotheticals “are *not a part of* the delivery of ***342 goods **1128 or services” and thus fall outside the delivery exemption as Simpson would interpret it. But, as we recently observed, “[d]uring’ means ‘at some point in the course of.’” (*People v. Lewis, supra*, 43 Cal.4th at p. 514, 75 Cal.Rptr.3d 588, 181 P.3d 947.) Statements or conduct made *during* the delivery of goods or services thus would qualify as statements or conduct made *in the course of* delivering the goods or services. (Cf. § 425.17(c)(1).)

Simpson attempts to narrow the definition of the delivery exemption by combining language that appears in two different sentences in *Brill, supra*, 132 Cal.App.4th at page 341, 33 Cal.Rptr.3d 371, to argue that the exemption extends only to “ ‘statements ... made and conduct engaged in *as part of* ... the type of business transaction engaged in by defendants.’ ” But this formulation does not appear anywhere in the text of section 425.17(c)(1). If, as Simpson effectively concedes, the delivery prong requires an interpretive gloss to avoid absurd results, it seems more consonant with legislative intent to adopt the restriction the Legislature articulated earlier in the sentence setting forth the exemption rather than to rummage about elsewhere for new limitations arising out of whole cloth.

Moreover, Simpson's construction of the delivery prong would render the first part of section 425.17(c)(1)—the so-called “content and purpose” *29 prong—surplusage. Statements or conduct that are “ ‘part of ... the type of business transaction engaged in by defendants’ ” would necessarily encompass “representations of fact about that person's ... business operations, goods, or services, that [are] made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” (§ 425.17(c)(1)) inasmuch as *every* business engages in efforts to obtain approval for, promote, or secure sales or transactions in its goods or services. Indeed, Simpson concedes that “a grocer's advertisement in advance of intended sales” falls within its broad definition of the delivery prong “to the extent the advertising informs the public about the availability of the product for delivery” *or* “to the extent the advertising keeps the product in the public eye and bolsters its prestige.” With such a broad definition of the

delivery prong, there would be no need for the content and purpose prong.

The legislative history further undermines Simpson's interpretation of the statute. Summaries of the bill prepared for various legislative committees consistently stated that section 425.17(c) would prohibit “the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct consisting of representations of fact about their goods, services or business operations, or those of a competitor, when *those* statements or conduct were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, *or* in the course of delivering the person's goods or services, if the intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer, ...” (Legis. Analyst, 3d reading analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended July 8, 2003, p. 1, italics added; Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 2, italics added; Assem. Republican Caucus, analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 1, italics added; see also Sen. Sheila Kuehl, letter to Governor Gray Davis, Sept. 3, 2003, p. 2.) In addition, an analysis prepared for the Senate Committee on the Judiciary noted that Senate Bill 515 was ***343 “consistent with the recommendation of the Senate Judiciary Committee analysis last year on [Senate Bill] 1651[,] which urged the sponsors to look at *the content and context* of the statement or conduct when crafting an exemption, rather than enacting a wholesale exclusion of a class of defendants[,] which had been proposed in [Senate Bill] 1651.” (Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, p. 9, italics added.) Simpson offers no explanation why the Legislature would have been so concerned about the content of the statement or conduct in the first part of section 425.17(c)(1) but would **1129 have abandoned any such concern in the remainder of the sentence.

[12] *30 For these reasons, we interpret section 425.17(c) to exempt from the anti-SLAPP law a cause of action arising from commercial speech when (1) the cause of action is against a person primarily engaged in the business of selling or leasing goods or services; (2) the cause of action arises from a statement or conduct by

that person consisting of representations of fact about that person's or a business competitor's business operations, goods, or services; (3) the statement or conduct was made either for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services or in the course of delivering the person's goods or services; and (4) the intended audience for the statement or conduct meets the definition set forth in [section 425.17\(c\)\(2\)](#).

[13] Gore does not dispute that he is in the business of selling legal services, that Simpson's causes of action arise from Gore's advertisement, that the purpose of the advertisement was to promote Gore's legal services, or that the advertisement was addressed to a qualifying audience under [section 425.17, subdivision \(c\)\(2\)](#). The point of contention concerns whether the causes of action “aris[e] from ... representations of fact about [Gore's] ... business operations, goods, or services.” (§ 425.17(c)(1).) We find that they do not.

Simpson's complaint asserts claims for defamation, trade libel, false advertising, and unfair business practices. The common theme among these causes of action is the allegation that the advertisement “communicates that Simpson's galvanized screws are defective.” The complaint alleges in particular that the advertisement “is libelous on its face in that it falsely communicates to the reader that Simpson's products are defective”; that the advertisement “disparaged Simpson's goods in that the Advertisement falsely communicates to the reader that Simpson's galvanized screws are defective”; that these assertions in the advertisement “are false and misleading”; and that using “the false and misleading Advertisement to recruit potential plaintiffs to participate in an unjustified class action lawsuit against Simpson” was an unfair business practice.

We will assume *arguendo* that the advertisement implies that Simpson's galvanized screws are defective. As the Court of Appeal recognized, however, even an implication that Simpson's screws are defective “is not ‘about’ Gore's or a competitor's ‘business operations, goods, or services....’” (§ 425.17(c)(1).) It is, rather, a statement ‘about’ *Simpson*—or, more precisely, Simpson's products.” It therefore falls squarely outside [section 425.17\(c\)](#)'s exemption for commercial speech.

Simpson contends that the advertisement does nonetheless satisfy the commercial speech exemption in that it “expressly states that ‘an attorney’ will ‘investigate whether you have a potential claim’” and that it also *31 supports the inference “that Gore has investigated the named companies and has discovered that they are selling ***344 defective screws.” Both of these statements are “about” Gore's business operations, but neither satisfies the elements of the commercial speech exemption to the anti-SLAPP law.

[14] Simpson's causes of action plainly do not “arise from” (§ 425.17(c)) the representation that an attorney will investigate “whether you have a potential claim.” Simpson's complaint does not allege that this statement is false or even that it is defamatory. In addition, a promise of what an attorney will do if the reader were to respond to the advertisement “is not a representation of fact, but an agreement to take certain actions in the future.” (*Navarro v. IHOP Properties, Inc.* (2005) 134 Cal.App.4th 834, 841, 36 Cal.Rptr.3d 385.) Consequently, it does not constitute “representations of fact about that person's ... business operations, goods, or services.” (§ 425.17(c)(1).)

The alleged inference that Gore has investigated Simpson and discovered that the galvanized screws are defective is not obvious from the advertisement itself, which asserts only that users of these fasteners “may” have certain (but unspecified) legal rights and that an attorney would need to “investigate whether you have a potential claim.” Even if **1130 one were to draw this inference, however, it would be no more than an attempt to layer the allegedly defamatory inference itself—i.e., that Simpson's galvanized screws are defective—with an alleged inference that Gore had *discovered* the defect. Simpson cites no authority for expanding the scope of the commercial speech exemption in this manner. (Cf. *Stewart v. Rolling Stone LLC* (2010) 181 Cal.App.4th 664, 676, 105 Cal.Rptr.3d 98 [the commercial speech exemption did not apply to a claim that the defendant magazine wrongfully used plaintiffs' names for a Camel advertisement; “as plaintiffs concede, the goods they sell are copies of Rolling Stone magazine, not Camel cigarettes. More significantly, the statement or conduct at issue here did not consist of ‘representations of fact about the business operations, goods, or services’ of Rolling Stone or of any of defendants' business competitors. Instead, the representation at the center of this lawsuit is the representation that plaintiffs and their fellow musicians

endorse the sale and use of Camel cigarettes”]; accord, *New.Net v. Lavasoft* (C.D.Cal.2004) 356 F.Supp.2d 1090, 1104 [the commercial speech exemption did not apply because “the purportedly offending statements are not statements made about Defendant's product, but rather statements about Plaintiff and its products” and the two were not competitors]; see also *Troy Group, Inc. v. Tilson* (C.D.Cal.2005) 364 F.Supp.2d 1149, 1151, 1155 [defendant investment adviser's e-mail asking whether plaintiff corporation is one of “the biggest crooks on the planet or what?” is “clearly not about [defendant]'s business, rather it is about [plaintiff], which, as [plaintiffs] admit, is not a business competitor of [defendant]”].) We are reluctant to allow plaintiffs to evade the limitations of the statutory *32 text by mere wordplay, especially given our obligation to construe the commercial speech exemption narrowly.

Moreover, Simpson has not attempted to recover damages here because of any implied representation that Gore allegedly *discovered* that Simpson's products were defective, but because Gore allegedly *implied* that they were defective. Whether the Simpson products are in fact defective is beyond the scope of this proceeding, but the inference that they are defective is not a representation of fact about *Gore's* business operations, goods, or services. The Court of Appeal stated the issue succinctly: “To the extent that Gore's advertisement ‘consists of’ representations about his services, Simpson's action does not ‘aris[e] ***345 from’ it; to the extent that Simpson's action ‘aris[es] from’ a representation by Gore, the representation was not ‘about’ Gore's or a competitor's services or business operations.”⁴

Simpson argues next that the commercial speech exemption from dismissal under the anti-SLAPP statute should not require that the statement itself giving rise to the cause of action include factual representations about the defendant's or a business competitor's business operations, goods, or services, as long as the statement giving rise to the cause of action is *accompanied* by factual representations about the defendant's or a business competitor's business operations, goods, or services. The statute's plain language, however, is otherwise. The commercial speech exemption applies only to a cause of action “arising from” a statement (or conduct) that “consists of representations of fact about that person's or a business competitor's business operations, goods, or services....” (§ 425.17(c)(1).)

Simpson complains, with rhetorical flourish, that the advertisement “defam[es] Simpson in order to tout Gore and his services.... The tout and the defamation were of an inseparable whole, with the defamation serving as bait for the tout. The Court of Appeal's approach is as if to parse cheese from a mousetrap.” But this is merely another way of saying that the speaker made a representation of fact about a *noncompetitor's* goods for the purpose of promoting the speaker's own services. Had the Legislature intended the commercial speech exemption to encompass representations of fact about *any* **1131 business operations, goods, or services made for the purpose of promoting sales, leases, or transactions in the speaker's own goods or services, then it would not have limited the exemption to statements or conduct consisting of “representations of fact about *that person's or a business competitor's* business operations, goods, or services” (§ 425.17(c)(1); see *Mendoza v. *33 ADP Screening and Selection Services, Inc.* (2010) 182 Cal.App.4th 1644, 1652, 107 Cal.Rptr.3d 294 [“the Legislature appears to have enacted section 425.17, subdivision (c), for the purpose of exempting from the reach of the anti-SLAPP statute cases involving comparative advertising by businesses.”].)

[15] [16] The legislative history accords with the statute's plain language. As stated earlier, committee reports summarized the bill as “[p]rohibit[ing] the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct *consisting of* representations of fact about their goods, services or business operations, or those of a competitor, *when those statements ...* were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, or in the course of delivering the person's goods or services....” (Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 3, italics added.) The plain language and the legislative history each confirm that the statement or conduct giving rise to the cause of action must consist of factual representations about the speaker's (or a competitor's) goods, services, or business operations. Nothing in the plain language or the legislative history suggests it would be enough to protect against dismissal under the anti-SLAPP statute if the factual representations about the speaker's or a competitor's business simply appeared in the ***346 same publication as the statements actually giving rise to the cause of action.⁵

Indeed, Simpson's proposed construction would seriously undermine the anti-SLAPP statute itself. As Gore points out, a press release critical of a political candidate—i.e., core political speech—would lose the protection of the anti-SLAPP statute if the press release *also* mentioned the products sold by the business. We therefore reject Simpson's expansive construction of the commercial speech exemption and conclude, in accordance with the trial court and the Court of Appeal, that Simpson's complaint was not exempted from the anti-SLAPP statute by [section 425.17\(c\)\(1\)](#).

The trial court went on to consider Gore's special motion to strike the complaint under [section 425.16](#), determined that Simpson had failed to establish a probability of prevailing on the merits, and granted the special motion to strike. The Court of Appeal affirmed. The correctness of those rulings is beyond the scope of our grant of

review, which was limited to the [*34](#) applicability of the commercial speech exemption to the anti-SLAPP statute set forth in [section 425.17\(c\)\(1\)](#).

DISPOSITION

The judgment of the Court of Appeal is affirmed.

WE CONCUR: [GEORGE](#), C.J., [KENNARD](#), [WERDEGAR](#), [CHIN](#), [MORENO](#), and [CORRIGAN](#), JJ.

All Citations

49 Cal.4th 12, 230 P.3d 1117, 109 Cal.Rptr.3d 329, 38 Media L. Rep. 1737, 10 Cal. Daily Op. Serv. 5946, 2010 Daily Journal D.A.R. 7087

Footnotes

- 1 SLAPP is an acronym for "strategic lawsuit against public participation." ([Jarrow Formulas, Inc. v. LaMarche \(2003\) 31 Cal.4th 728, 732, fn. 1, 3 Cal.Rptr.3d 636, 74 P.3d 737.](#)) All further statutory references are to the Code of Civil Procedure unless otherwise indicated.
- 2 See [Leoni v. State Bar \(1985\) 39 Cal.3d 609, 624, 217 Cal.Rptr. 423, 704 P.2d 183](#) (lawyer advertising is protected by the First Amendment).
- 3 As Simpson points out, [Brill](#) did place the burden on the defendant. But [Brill](#) analyzed only whether the applicability of the commercial speech exception was part of [Equilon's](#) first step, where the court decides whether the defendant has made a threshold showing the challenged cause of action arises from protected activity, or part of [Equilon's](#) second step, where the court determines whether the plaintiff has demonstrated a probability of prevailing on the claim. ([Brill, supra, 132 Cal.App.4th at pp. 329–331, 33 Cal.Rptr.3d 371.](#)) [Brill's](#) conclusion that the defendant had the burden of proof to establish the nonapplicability of the commercial speech exception was based solely on its classification of the issue as a first-step determination and did not at all consider [section 425.17's](#) status as an exception to [section 425.16](#) or any canons of construction. ([Brill, supra, at p. 331, 33 Cal.Rptr.3d 371.](#)) [Brill Media Co., LLC v. TCW Group, Inc., supra, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371](#), is therefore disapproved to the extent it is inconsistent with our holding here.
- 4 One can conceive of a cause of action arising from a representation of fact about the attorney's own services—such as a false claim that the attorney had already recovered a judgment against the manufacturer for the defective product—but the advertisement in this case did not contain such a representation.
- 5 Simpson complains that a party should not be able to defeat the commercial speech exception to the anti-SLAPP statute by parsing a two-sentence advertisement into its component parts. We agree. The proper test does not turn on the punctuation used in the advertisement, but on the basis for the cause of action. Here, the causes of action all arise from the inference that Simpson's products are defective, an inference that Simpson alleges is implied from the text of the advertisement. This inference, though, contains no representations of fact about [Gore's](#) business operations, goods, or services.

34 Cal.App. 660, 168 P. 595

WILLIAM D. STEPHENS, Governor
of the State of California, Petitioner,

v.

JOHN S. CHAMBERS, State
Controller, Respondent.

Civ. No. 1757.

Court of Appeal, Third District, California.
September 17, 1917.

CONSTITUTIONAL LAW--APPROPRIATION OF
PUBLIC MONEY FOR PEACE JUBILEE AT
VICKSBURG--VALID LEGISLATIVE
ENACTMENT--GIFT PROVISION NOT VIOLATED.

The act of the legislature which became effective July 31, 1917 (Stats. 1917, p. 1608), appropriating the sum of fifteen thousand dollars, to be expended by the Governor, in his discretion, for the purpose of assisting to defray the expenses of a public nature incident to the holding of the national memorial reunion and peace jubilee at Vicksburg, Mississippi, in October, 1917, is a valid enactment, and is not within the inhibition of section 31 of article IV of the Constitution, prohibiting any gift of public money to any individual or corporation, and interdicting the appropriation of public money for the purpose or benefit of any corporation or institution not under the exclusive management and control of the state as a state institution.

ID.--REQUIREMENTS OF BILL APPROPRIATING
PUBLIC MONEY--CONSTITUTIONAL PROVISION
NOT CONTRAVENED.

The act of the legislature which became effective July 31, 1917, appropriating public money for the purpose of assisting to defray the expenses of a public nature incident to the national memorial and peace jubilee at Vicksburg, Mississippi, in October, 1917, is not inconsistent with section 34 of article IV of the Constitution, declaring that no bill making an appropriation of money, except the general appropriation bill shall contain more than one item of appropriation, and that for a single and certain purpose to be expressed therein, because of the indefiniteness of the language of the act.

ID.--EXPENDITURE OF MONEY--DISCRETION
OF GOVERNOR--VALIDITY NOT AFFECTED.

The act of the legislature which went into effect July 31, 1917, appropriating public money for the national peace jubilee celebration at Vicksburg, Mississippi, in October, 1917, is not void because it vests the Governor with discretion in the expenditure of the money appropriated.

APPLICATION for a Writ of Mandamus originally made to the District Court of Appeal for the Third Appellate District.

The facts are stated in the opinion of the court.

*661 L. T. Hatfield, for Petitioner.

U. S. Webb, Attorney-General, and Robert W. Harrison, Deputy Attorney-General, for Respondent.

HART, J.

This is an application for a writ of mandate requiring respondent, as state controller, to draw his warrant in favor of petitioner "for such portion of the sum of fifteen thousand dollars, as petitioner may require."

At the recent session of the legislature there was regularly passed an act entitled "An act to provide for the celebration of the national memorial reunion and peace jubilee at Vicksburg, Mississippi, and making an appropriation therefor," which act was by the Governor approved and took effect July 31, 1917 (Stats. 1917, p. 1608). Section 1 thereof reads, in part, as follows: "There is hereby appropriated ... the sum of fifteen thousand dollars, to be expended by the Governor, in his discretion, for the purpose of assisting to defray the expenses of a public nature incident to the holding of the national memorial reunion and peace jubilee to commemorate the victories and virtues leading to the half century of peace and prosperity to the American nation, and further to strengthen the fraternal ties of amity in the United States," said reunion to be held at Vicksburg in October, 1917, on certain named days.

Section 2 provides that the Governor shall "demand from the state controller, and the state controller is hereby authorized and instructed upon such demand, to draw his warrant in favor of the Governor for the sum of fifteen thousand dollars to be expended by him as above provided, and the treasurer is hereby authorized and directed to pay the same."

By way of answer and return to the petition for a writ of mandate, respondent alleges that said petition "does not state facts sufficient to entitle the petitioner to the relief prayed for," and it is contended that the attempted appropriation of money is contrary to the provisions of section 34, article IV, of the Constitution, which reads: "No bill making an appropriation of money, except the general appropriation bill, shall contain more than one item of appropriation, and that for one single and certain purpose, to be therein expressed."

Thus it will be observed that, so far as the pleadings in this proceeding are concerned, the legality of the statute or appropriation *662 in question is attacked upon one ground only. Indeed, in his brief, the attorney-general appears to concede that it is within the constitutional competence of the legislature of this state to appropriate money from the funds of the state for the purpose and object for which the appropriation is made by the act under attack here, for he says: "In the determination of the validity of this appropriation, it is not necessary to question the objects and purposes of the reunion to be held at Vicksburg. It may well be admitted that such reunion tends to do all of the things expressed in the act as the reasons for holding such reunion. Nor do we here contend that the holding of such reunion is not a matter of state and national importance and one which it might well be to the state's advantage to encourage, even to the extent of appropriations of money to defray the expenses incident thereto." In thus expressing himself, the attorney-general doubtless took into consideration, as properly he should, the act of the Sixty-fourth Congress of the United States (Session of 1915-16)--Act Cong. Sept. 8, 1916, c. 464, 39 Stat. 812--whereby money was appropriated for defraying the expenses of the "National Memorial Celebration and Peace Jubilee at Vicksburg, in the year 1917, by the survivors of the armies of the Tennessee and of the Mississippi," who participated in the memorable battle of Vicksburg in the month of July, 1863, for the reason that the appropriation involved in the act whose validity is here challenged is in aid of the purposes and objects of said act of the national Congress. With this concession of the attorney-general that there legally reside in the state the power and the right to appropriate a reasonable amount of the public moneys to aid in the achievement of the purposes of the act of Congress referred to, further consideration herein thereof might well be waived or dismissed, but, in view of the strictness with which the Constitution, by certain provisions therein

contained, guards the disposal of the public revenues, and of certain cases expounding those provisions, some observations with respect to that proposition need not be deemed out of place herein.

From what has already been said, it is doubtless plain enough that we are in full accord with the concession of the attorney-general that the legislature may, without offending any of the inhibitory mandates of the Constitution with regard to the appropriations of the public moneys, make such *663 an appropriation as the one whose legality is challenged in this proceeding; and so we express ourselves because of the conviction that, while the legislature will not be permitted to go beyond the bounds expressly established by the people through their Constitution in the matter of the disposal of the revenues raised for the support of the state government. it would be opposed to and, indeed, conceivably in many instances, subversive of the highest ends and the best interests of, a government whose sovereignty and general policies are outlined and controlled by a written constitution, framed in language necessarily general, if it were found requisite, in constitutional construction, to hold that the terms of the organic law should on all occasions be accepted and applied in their literal sense, or that there are not certain matters incidental and necessary to every well-governed state and its subjects as to which the Constitution is silent, in so far as express language is concerned, and as to which legislation looking to the highest welfare of the governed is absolutely necessary. A written constitution, like a statute, cannot so deal with particulars as to meet or provide for every case or contingency which may arise and of which legislative cognizance is allowable if necessary to the complete enjoyment of those privileges, immunities, and rights which are of the essence, and, indeed, the primary and foremost objects of a government in which, like ours, ultimate sovereignty is in the people themselves. By this we do not mean to say that the limitations or barriers contained in the Constitution against the exercise of legislative power may be set aside or disregarded, or that the intent of the organic law, as it is to be gathered from the instrument itself, shall not in all cases prevail. Nor do we intend thus to imply that the courts, in the construction of a written constitution, may be governed by a change in public sentiment as to any subject to which express attention is given and as to which limitations are fixed by the Constitution. But what we do maintain is that, since a written constitution is intended as and is the mere framework according to whose

general outlines specific legislation must be framed and modeled, and is therefore, as stated and as is essentially true, necessarily couched in general terms or language, it is not to be interpreted according to narrow or super-technical principles, but liberally and on broad general lines, so that it may accomplish in full measure *664 the objects of its establishment and so carry out the great principles of government.

The Constitution of the United States involves a grant and limitation of powers. The federal government, through its Congress, can exercise or exert no power which is not clearly within the grant of the federal Constitution; and this means that Congress may exercise only the powers expressly conferred upon the federal government and such incidental or auxiliary powers as may be essential to the exercise and execution of the powers expressly granted. There is no provision in the national Constitution expressly authorizing the expenditure of public moneys for the purposes and objects stated in the act of Congress above referred to. Nor is there any single provision of that Constitution within the spirit or reason of which does authority for such an appropriation of the public moneys fall. The same is true as to the several acts of Congress pensioning soldiers who fought to uphold the Union in our domestic Civil War. But the latter acts, as well as the one giving rise to the appropriation herein attacked, have never been challenged upon the ground that they were *ultra vires*, or beyond the authority of Congress to enact. Perhaps, by applying to them the touchstone of strict technical principles of construction, their force as legal enactments might be destroyed. But no such view or method of construction as applied to those acts would by any court be accepted or resorted to. To the contrary, in comparing them with the Constitution, if, indeed, the solution of the question whether they are or are not valid involves a matter of constitutional construction, the courts, if discovering even no indirect or inferential authority for their enactment in the language of that instrument, would nevertheless find ample sanction for them in the general spirit of our national government and in the genius of our political institutions, as outlined and promulgated by the Constitution itself and so sustain them as treating with subjects which clearly fall, not within the letter of the organic law, but within the spirit and reason of those general policies which inhere, and of necessity must inhere, in every government framed and formed upon the lines of enlightened general principles--policies consistent and in harmony with the nature and

form of the government as outlined by the primary law of the land and the absence of which would greatly and seriously curtail or *665 restrict that full enjoyment of the rights of persons and of property which can only come from a government deriving its force from the consent of the governed. It would, indeed, come as a shock if the courts felt compelled to declare and so hold that laws pensioning those who fought to preserve the integrity of the American Union and who, from their accumulated years or disease, are unable to care for themselves, were beyond the power of Congress to enact. Such a judicial fiat would be universally denounced as repugnant to every consideration of governmental duty, obligation, and gratitude. But the motive underlying such legislation is much broader and more far-reaching in its effect upon the government of society than the mere consideration of gratitude. Undeniably, the stability of every civilized government and its political institutions wholly depends upon the patriotism and loyalty thereto of its subjects; hence it is the first duty of every government so to administer its affairs as to inspire in its citizens patriotism and loyalty to the fundamental political principles upon which it is founded, and, to that end, through appropriate policies, teach and exemplify the duty which every citizen owes to his country and its government. Therefore, as stated, legislation which provides for the pensioning of those who have fought the battles of their country for the preservation of its governments and who are in need of assistance involves not only the quality of gratitude, but a just and substantial recognition of services inspired by patriotism, without which battles cannot, as a rule, successfully be fought. If it may be said as to the present crisis with which our country is confronted that patriotism in our citizens has not been aroused, how infinitely worse would the conditions in that regard now be if, in the past, our government had wholly failed in a proper way to recognize and reward, in proper cases, those who had gone to the front and fought our battles in the past?

As we understand the congressional act in aid of the purposes and objects of which the appropriation challenged here was made by our own legislature, the great object and desideratum thereof is to bring about a sentiment of amity between those sections of our country who opposed each other in one of the most bitterly fought domestic wars of which history gives any record; for it is a matter of common historical knowledge that the bitterness of sentiment brought *666 about between the northern and southern sections by that war existed in

full vigor down to the opening of hostilities between this country and Spain, which ended with the late Spanish-American war. And there can hardly be any doubt that that same old feeling in some degree still lingers or exists. The governments of the Union and of the states could adopt no more effective policy for reuniting the two sections in one common political sentiment than that which is involved in and represented by the legislation in question. That the inevitable effect of such a gathering, annually held, as seems to be the policy of Congress, so long as there is a considerable number of the survivors of both sides of that war, will be ultimately to destroy every vestige of that old feeling of antagonism in political sentiment (we here use the word "political" in its more comprehensive sense), there cannot be the shadow of a doubt; and that the inevitable consequence of a condition so brought about will be to establish throughout the whole country a deeper, more abiding and a universal love for our common country and its government, is equally plain. Congress could have exercised no power or established no other policy more conducive to the general welfare of our government and the people, for no government can long exist with its people radically divided in sentiment upon the fundamental political doctrines upon which it is founded.

If, then, Congress, circumscribed as it is within the narrow bounds of granted and limited powers, may rightfully, in the absence of express authority therefor, but solely by the exertion of that power which must inhere in every government if the general welfare is on all occasions and in every emergency to be subserved as intended by the very nature and spirit of our form of government, appropriate moneys from the public revenues for the purpose of accomplishing the great ultimate object of the act in question, why may not a state, essentially a constituent part of the Union--which, indeed, goes to the making of the Union--make a like appropriation as in aid of the object thus to be achieved?

While the governments of the Union and the states are independent of each other, operate within distinctly different spheres, and are designed for the accomplishment of different specific objects, yet, upon general political or governmental policies their interests are common, and what in a political sense stands for the general welfare of the Union necessarily *667 stands for the general welfare of the states. Unquestionably, the states, as separate entities and as component parts of

the Union, are each equally with the Union interested in the crystallization and execution of any policy of the federal Union that will tend to perpetuate the permanency of the latter, for largely if not wholly upon the perpetuity of the Union depends the permanency of the states as governmental organizations. It follows, therefore, that the policy of the general government with respect to the subject matter of the act of Congress above mentioned is necessarily the policy of each of the states, and that within the latter, no less than within the federal government, resides the power of effectuating and applying that policy. In other words, the duty, if it be a duty, of contributing to the carrying out or execution of that policy rests no less upon the states than upon the federal government. And the right of the states to do so does not depend upon any authority vested in them by express language in their constitutions, nor is it to be controlled by the restrictions or limitations upon the legislative power contained in those instruments, but, as in the case of the federal government, arises from that inherent, dormant power which may legally be aroused to action, exerted and applied by all democratic governments, controlled by written constitutions, whenever the exigencies of government imperatively require its exertion and exercise--that power which, in a general sense, is analogous to the general war powers of the federal government, under which, as war measures, the latter may, as it is now doing, properly control trade principles and execute an infinite variety of other acts which, under normal conditions, approach if not in truth involve paternalism in government or unwarranted abridgments of individual rights as assured and guaranteed by the Constitution.

Thus, it is clear, the inhibitions of our state Constitution against any gift of public money to any individual, municipal or other corporation (article IV, section 31), and interdicting the appropriation of public money "for the purpose or benefit of any corporation, association, ... or other institution not under the exclusive management and control of the state as a state institution" (Const., art. IV, sec. 22) have no application to this case. Indeed, it has been so held in a decision treating a proposition quite analogous in principle to that submitted for solution here. (*668 *Daggett v. Colgan*, 92 Cal. 53, [27 Am. St. Rep. 95, 14 L. R. A. 474, 28 Pac. 51].) That case involves an interesting and instructive discussion of the propositions to which we have hereinabove given considerable attention, and we may, therefore,

pardonably and with advantage, reproduce herein an extended excerpt from the learned opinion therein. It should first be explained that the legislature of 1891 (Stats. 1891, p. 24) passed an act appropriating a large sum of money to be paid to the California Commission of the World's Fair Columbian Exposition, held in the city of Chicago, and to be used by said commission in the construction of buildings at said fair in which to maintain an exhibit of the industrial products of this state and to defray the expenses arising in connection with such exhibit. The state controller, claiming that the appropriation made by the act was in direct contravention of that part of section 22, article IV, of the Constitution above quoted herein, declined to draw his warrant in favor of said commissioners on the fund so appropriated. After discussing that proposition adversely to the position of the controller, the court, in its opinion, made these significant observations:

“The defendant further contends that the statute is unconstitutional for the reason that the appropriation thereby made is not for a public use, such as the state is authorized to make; that the maintenance of an exhibition of the products of the state in the manner contemplated does not fall within the legitimate authority of the state government.

“In passing upon this proposition, it is necessary to bear in mind that what is for the public good, and what are public purposes, ‘are questions which the legislature must decide upon its own judgment, in respect to which it is vested with a large discretion which cannot be controlled by the courts, except, perhaps, where its action is clearly *evasive*.... Where the power which is exercised is legislative in its character, the courts can enforce *only* those limitations which the Constitution imposes; not those implied restrictions which, resting in theory only, the people have been satisfied to leave to the judgment, patriotism, and sense of justice of their representatives.’ (Cooley's Constitutional Limitations, 154.)

“It is undoubtedly true that public money can be rightfully expended only for public purposes, but as well said by that eminent jurist, Judge Cooley, in delivering the opinion of the court in *669 *People v. Salem*, 20 Mich. 452, [4 Am. Rep. 400]: ‘*Necessity* alone is not the test by which the limits of state authority in this direction are to be defined, but a wise statesmanship must look

beyond the expenditures which are absolutely needful to the continued existence of organized government, and embrace others which may tend to make that government *subserve the general well-being of society*, and advance the present and *prospective happiness and prosperity of the people.*’

“In view of these principles of constitutional law, which are so well settled as to be placed beyond discussion or dispute, it is manifest, we think, that the court is not authorized to declare the act under consideration void, upon the theory that the expenditure thereby authorized can in no manner be considered as tending to promote the public welfare, which it is one great object of government to secure. The question whether the public interests of the state would be at all advanced by an exhibition of its products such as is contemplated by the act was an appropriate one for discussion in the halls of the legislature before its enactment, and for the consideration of the Governor before approving it, but it is not one for this court to decide, upon the individual views of its members concerning the wisdom or expediency of such legislation.

“There is no difference, except in degree, between the appropriation contained in this act and those which for years have been made without any question as to their validity, for the support of the state agricultural fair, and the various district agricultural societies throughout the state. The fact that this exhibit of the products of the state is to be made without the limits of the state does not change its essential character, or make it any less an occasion or purpose in which, in an enlarged sense, it may be said that the people of the state have an interest. So, also, it would be hard to distinguish this appropriation in principle from those appropriations which have been made from time to time for the maintenance of horticultural, viticultural, and other similar commissions. None of these, strictly speaking, are required for the proper administration of the government of the state, and possibly, in the opinion of many, call for an unjustifiable and useless expenditure of money. But the power of the legislature to create such commissions has never been doubted.

*670 “We know from the express declaration of the act of Congress authorizing the Columbian Exposition that the purpose of the exposition is to commemorate the four hundredth anniversary of the discovery of America,

‘by an exhibition of the resources of the United States of America, their development, and of the progress of civilization in the New World’; and that such exhibition is to be of a ‘national and international character, so that not only the people of the Union and of this continent, but those of all nations, as well, can participate.’

“We have no doubt that it was fairly a matter within the power of the legislature to determine whether, as a matter of public policy and as tending to advance the best interests of its citizens, this state should join with its sister states, and with the government of the United States, in celebrating in the way suggested the historical event referred to.

“It has been held in many cases that a municipal corporation has no authority, under the general powers usually given such corporations, to appropriate money for the celebration of the anniversary of important events in the history of our country, such as the Fourth of July (*Hodges v. Buffalo*, 2 Denio (N. Y.), 110; *Hood v. Lynn*, 1 Allen (Mass.), 103) and the surrender of Cornwallis. (*Tash v. Adams*, 10 Cush. (Mass.) 252. See, also, *The Liberty Bell*, 23 Fed. 844.)

“These decisions, however, all rest upon the principle that municipal corporations have no powers except such as are specifically granted by the act of incorporation, or are necessary for the purpose of carrying into effect the powers expressly granted. *But it has never been doubted that the state could confer upon a city or town the authority to celebrate such important events in the history of the country as appeal to the patriotism or higher sentiments of the people, and to tax their citizens to pay the expense thereof.* Thus it was held that the city of Philadelphia had the power under its charter to provide for the entertainment of distinguished visitors upon the occasion of the celebration of the Centennial Anniversary of American Independence. (*Tatham v. Philadelphia*, 11 Phila. (Pa.) 276.) So, also, in Massachusetts, by general statutes, the power has been conferred upon towns to celebrate the centennial anniversary of their incorporation (*Hill v. East Hampton*, 140 Mass. 381, [4 N. E. 811]), and also to appropriate money for the celebration of holidays, and for *671 other public purposes. (*Hubbard v. Taunton*, 140 Mass. 467, [5 N. E. 157].)

“These cases are authority for the proposition that the state itself, unless restrained by its Constitution, has the

power to make appropriations for such purposes, because unless it possesses the power, it could not confer it upon its municipal corporations. Such expenditures are justified under the general power which the state has to provide for the public welfare--the limits of which are perhaps not capable of exact definition--*and are the same in principle as appropriations made for the building of monuments to commemorate great historical events, or for the erection in public places of the statues of those who by common consent are classed among the patriots or benefactors of the nation.*

“Undoubtedly this power may be the subject of great abuse, but this is no argument against its existence. The only protection against reckless and improvident appropriations for public purposes must be found in the character of those intrusted with the power of legislation, and in the integrity and firmness of the chief executive of the state.”

Obviously, there is a distinction between the act questioned in the Daggett case and the act involved in this proceeding with respect to the specific objects of the respective appropriations of the public money. Both, however, aim at the accomplishment of the same general object, viz., the promotion of the general public welfare. For, so far as the promotion of the public welfare is concerned, no distinction in importance or effect between the two acts can logically be pointed out. The exploitation of the industrial resources of a state is surely a matter which directly affects and, where such resources are in magnitude such as to demonstrate the natural material wealth and prosperity of the state, promotes the public welfare. No less may be said of public acts looking to the promotion and fostering in the citizens of a state or nation sentiments of patriotism, which, as we have shown, and as is most obviously true, constitutes the essential mainspring of every stable government. What, indeed, would industrial prosperity count for in a country whose government was without the support of the patriotism and loyalty of its subjects? The past political history of Russia, at this writing in the throes of bitter political disturbances and turbulences, may well stand as an answer to the question.

*672 As stated in the opinion in the Daggett case, *supra*, the question whether the public interests of the state as well as of the nation of which the former is an essential part will be advanced by the meeting in reunion at Vicksburg of the survivors of both sides of the Civil War that fought

at the battle known in history by the name of that city was an appropriate one for discussion in the halls of the legislature before the appropriation was made by a legislative act, and for the consideration of the executive before approving it. We must assume that the legislature and the Governor had before them facts and data upon which they were enabled to predicate their judgment that the state and the Union would be materially benefited by the reunion and thus the public welfare and general well-being of society subserved. Their conclusion regarding the act cannot, therefore, be impeached by the courts.

There is no language or provision in the statute appropriating the money indicating that any individual will or can, if the appropriation be properly expended, or dispensed according to the face of the act, receive a single cent as a gratuity or by way of assistance, but that the money appropriated shall be expended in such manner as the executive shall determine will the better and the more effectively effectuate the specific objects of the appropriation and the ultimate purpose to be thereby subserved. And herein lies the distinction between the appropriation in question and that considered and properly held invalid by this court in the case of *McClure v. Nye*, 22 Cal. App. 248, [133 Pac. 1145]. The act in that case attempted to appropriate the sum of fifteen thousand dollars, out of the state treasury “for the purpose of paying the transportation of certain veterans of the Civil War to Gettysburg, Pennsylvania, on the occasion of the fiftieth anniversary of the battle fought on that battlefield.” Obviously, upon the very face of that provision the appropriation amounted to nothing less than a gift of public moneys, and hence flew squarely in the face of the provision of our Constitution against thus disposing of our public revenues. In the present case, as seen, the appropriation is to be used on the occasion of the reunion at Vicksburg for the purpose of effectuating the great, central object of the gathering, as pointed out by the act of Congress and the act here in question, viz., to strengthen the fraternal ties of amity in the United States.

*673 As shown, no express provision is made by the act for the payment of the transportation of veterans or other persons to Vicksburg, though we doubt not that if, in furtherance of the paramount and ultimate object of the reunion, it be necessary to apply some of the money in sending representatives from California to the reunion or convention, such expenditure would come within the legitimate purposes of the appropriation and the right of the state to bear.

We are now brought to the consideration of the principal point upon which the attorney-general relies to impeach the constitutional validity of the appropriation, viz.: That the act making the appropriation is inconsistent with the provisions of section 34 of article IV of the Constitution, which is above reproduced in full herein. The gravamen of the attorney-general's argument in support of this position is that the language of the act is so uncertain and indefinite that it cannot be determined therefrom whether the appropriation thereby provided for is or is not for a public purpose. This argument, no doubt, comes from the language of the act, “for the purpose of assisting to defray the expenses of a *public nature*,” etc. It may be conceded that this language is so general as to be ambiguous as to the specific purpose of the appropriation, and if the act contained no further amplification of the purpose for which the appropriation is designed than may be implied from those words-- that is, that the appropriation was for some unexpressed or undiscovered purpose--it might be necessary to hold that the position of the attorney-general is well taken. But the language referred to is immediately followed by other language which clearly and with certainty expresses the specific purpose of the appropriation--a purpose which the legislature has found refers to the general welfare of the state and, therefore, the expenses necessary for its execution a burden which may properly be borne by the state.

There is no ground to support the argument that the appropriation is not for a “single” purpose within the meaning of that word as it is employed in the section of the Constitution mentioned. The sole and only purpose of the appropriation, as is clearly deducible from the language of the act, is to assist in defraying the expenses of a convention of persons who are so to meet in reunion to effectuate a purpose by the execution of which, according to the tenor of the act here in *674 question and the act of Congress above referred to, the public welfare of the state will be subserved.

Nor is there any legal reason which will uphold the objection that the act is invalid because it vests in the Governor discretion as to the expenditure of the money appropriated. This provision was doubtless inserted in the act for the purpose of committing to the judgment of the executive the determination of the manner in which the appropriation may be expended to the best and highest interests of the state. If, for illustration, it becomes

necessary to send representatives from the state to the reunion, it is only proper that the Governor, upon whom the act fixes the responsibility for the expenditure of the money, should be clothed with some discretionary power as to the number of persons so to be sent, and as to the amount of money that should reasonably be expended for defraying the expenses of such representatives to Vicksburg and back and while there during the progress of the convention. This should be true, since the act itself does not undertake to point out specifically how the money shall be used. Of course, the presumption is that the executive will perform his duty under the act faithfully and in furtherance of the objects and purposes intended to be subserved thereby.

Our conclusion is that the appropriation is perfectly valid, and, accordingly, a writ of mandate will issue out of this court commanding and requiring the respondent, state controller, to draw his warrant or warrants on the fund appropriated by the act in favor of the Governor of the state of California, as provided by said act, and, in accordance with the stipulation heretofore filed herein by the attorneys of the respective parties, said writ is ordered to issue forthwith.

Chipman, P. J., and Burnett, J., concurred.

EXHIBIT 6
to Section 7

22 Cal.3d 208, 583 P.2d 1281, 149 Cal.Rptr. 239

Supreme Court of California

AMADOR VALLEY JOINT UNION HIGH

SCHOOL DISTRICT et al., Petitioners,

v.

STATE BOARD OF

EQUALIZATION et al., Respondents.

COUNTY OF ALAMEDA et al., Petitioners,

v.

STATE BOARD OF

EQUALIZATION et al., Respondents.

CITY AND COUNTY OF SAN

FRANCISCO et al., Petitioners,

v.

JOSEPH E. TINNEY, as Tax

Assessor, etc., et al., Respondents

S.F. No. 23849., S.F. No. 23850., S.F. No. 23855.

September 22, 1978.

SUMMARY

Various governmental agencies and concerned citizens, invoking the original jurisdiction of the Supreme Court to resolve issues great public importance, challenged, on multiple constitutional grounds, the validity of Cal. Const., art. XIII A, on its adoption by the electorate in 1978 as an initiative measure. Petitioners contended that the enactment, which changed the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments, constituted a revision of the Constitution and was therefore not adoptable through the initiative process (Cal. Const., art. XVIII). Petitioners also asserted that the single-subject requirement ([Cal. Const., art. II, § 8](#), subd. (d)) and the title and summary-of-purpose requirements ([Cal. Const., art. II, § 10](#); [Elec. Code, §§ 3502, 3503, 3531](#)) for initiative measures had been violated, and that the enactment violated the federal equal protection clause, impaired the constitutional right to travel, would inevitably result in impairment of contracts ([U.S. Const., art. I, § 10, cl. 1](#)) such as pension and health plan benefits, labor and other municipal contracts, *209 and redevelopment agency bonds, and was in any event void for vagueness.

The Supreme Court denied the respective petitions, holding that the enactment survived each of the substantial challenges. The enactment, the court held, was a constitutional “amendment,” not a “revision,” and was therefore adoptable through the initiative process; and because the several elements of the measure were reasonably germane to, and functionally related in furtherance of, the underlying purpose of effective real property tax relief, the measure did not violate the single-subject requirement. The title and summary of purpose of the measure, though imprecise in certain particulars, substantially complied with the law, especially in view of their subsequent correction in all but two counties and in the voters' pamphlet. The federal equal protection clause, the court held, was not violated by the provision requiring property acquired prior to 1975 to be assessed and taxed at its full cash value as shown on the 1975-1976 tax bill, and property acquired thereafter to be assessed and taxed according to its appraised value at the time of acquisition; there was a rational basis for the provision, namely, the theory that the annual taxes that a property owner must pay should bear some rational relationship to the original cost of the property, predicated on the owner's free and voluntary act of purchase, rather than relate to an unforeseen, perhaps unduly inflated, current value. In any event, there is no legal requirement that property of equal current value must be taxed equally. Nor was the federal equal protection clause violated by the provision requiring that any “special taxes” imposed by a city, county, or special district must be approved by a two-thirds vote of its qualified electors; because persons who vote in favor of tax measures may not be deemed to represent a definite, identifiable class, equal protection principles do not forbid “debasing” their vote, or “favoring” the negative votes, by requiring a two-thirds approval of such measures. With respect to the claim of impairment of the constitutional right to travel resulting from the change from the current value system to the acquisition value method, it could equally be argued that under the former system prospective purchasers of real property might well have been deterred from purchasing (thereby impairing their right to travel) by reason of the unpredictable nature of future property tax liability resulting from unlimited inflationary pressures. The challenge based on the impairment of municipal contracts, the court held, was premature, even assuming petitioners, without producing evidence of any present, specific, and substantial impairments affecting them, had the standing to assert the *210 claim; the enactment on its face neither directly repudiated any express covenant with municipal obligees nor immediately impaired any contract right. Finally, the court held that the enactment was not so vague in its essential terms as to

render it void and inoperable. As with other provisions of the Constitution, it would necessarily require judicial, legislative, and administrative construction, and it was already being implemented by extensive legislation and regulations that, if judicially challenged, could be dealt with on a case-by-case basis. (Opinion by Richardson, J., with Tobriner, Mosk, Clark, Manuel and Newman, JJ., concurring. Separate concurring and dissenting opinion by Bird, C. J.)

HEADNOTES

Classified to California Digest of Official Reports

(1)

Courts § 27--Supreme Court--Original Jurisdiction--Matters of Great Public Importance.

The original jurisdiction of the Supreme Court may properly be invoked where there is a need for prompt judicial resolution concerning matters of great public importance.

(2)

Initiative and Referendum § 6--State Elections--Initiative Measures-- Supreme Court Review.

In exercising its original jurisdiction to adjudicate the constitutionality of an initiative measure, such as one adopted by the voters of the state to limit the assessment and taxing powers of the state and local governments, the Supreme Court will restrict itself to an examination, in the light of established constitutional standards, of the principal, fundamental challenges to the validity of the initiative. The court will not consider or weigh the economic or social wisdom or general propriety of the initiative, and will defer analysis of the problems that may arise respecting the interpretation or application of particular provisions of the enactment for future cases in which those provisions are more directly challenged.

(3)

Initiative and Referendum § 6--State Elections--Initiative Measures-- Liberal Construction.

The power of initiative, reserved to the people under [Cal. Const., art. IV, § 1](#), must be liberally construed to promote the democratic process. *211

(4a, 4b, 4c)

Constitutional Law § 3--Adoption and Alteration-- Limitations on Taxing Power--Constitutional Amendment Adoptable Through Initiative Process.

Characterization of Cal. Const., art. XIII A (changing the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments), as a constitutional "revision" could not validly be predicated on the theory that it would result in the loss of home rule or in a change from a "republican" form of government (lawmaking by elected representatives) to a "democratic" governmental plan (lawmaking directly by the people); the enactment would not necessarily result in the delegation, to the Legislature, of the power to make those revenue and budgetary decisions formerly left to local discretion and control, and § 4 of the enactment (requiring that any "special taxes" imposed by a city, county, or special district must be approved by a two-thirds vote of its qualified electors) was nothing novel to the existing governmental framework of California. The enactment, limited in purpose, could fairly be deemed a constitutional "amendment," and thus validly adoptable through the initiative process.

(5)

Constitutional Law § 3--Adoption and Alteration.

Under Cal. Const., art. XVIII, the voters may accomplish a constitutional "amendment" by the initiative process, but a constitutional "revision" may be adopted only after the convening of a constitutional convention and popular ratification or by legislative submission to the people.

(6)

Constitutional Law § 2--Definitions and Distinctions--"Revision"-- "Amendment."

Cal. Const., art. XVIII, contemplates that the principles underlying a constitutional "revision," and the substantial entirety of such a revision, shall be of a permanent and abiding nature similar to that of the Constitution itself. The term "amendment," on the other hand, implies such an additional change within the lines of the original constitutional instrument as will effect an improvement, or better carry out the purpose for which it was framed.

(7)

Constitutional Law § 3--Adoption and Alteration--Revision or Amendment--Quantitative and Qualitative Analysis.

An enactment that is so extensive in its provisions as to change directly the "substantial entirety" of the Constitution by the deletion or alteration *212 of numerous existing provisions may well constitute a revision thereof. However, even a relatively simple enactment may accomplish such far-

reaching changes in the nature of our basic governmental plan as to amount to a revision also. Thus, a judicial analysis to determine whether a particular constitutional enactment is a revision or an amendment must be both quantitative and qualitative in nature.

(8)

Municipalities § 13--Legislative Control--"Home Rule."

The principle of home rule involves, essentially, the ability of local government (technically, chartered cities, counties, and cities and counties) to control and finance local affairs without undue interference by the Legislature.

(9a, 9b)

Initiative and Referendum § 6--State Elections--Initiative Measures--Single-subject Requirement.

Under [Cal. Const., art. II, § 8](#), subd. (d) (providing that an "initiative measure embracing more than one subject may not be submitted to the electors or have any effect"), an initiative measure will not violate the single-subject requirement if, despite its varied collateral effects, all of its parts are "reasonably germane" to each other.

(10a, 10b, 10c)

Initiative and Referendum § 6--State Elections-- Initiative Measures--Single-subject Requirement--Limitations on Taxing Power.

Cal. Const., art. XIII A (changing the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments), did not violate the single-subject requirement of [Cal. Const., art. II, § 8](#), subd. (d) (providing that an "initiative measure embracing more than one subject may not be submitted to the electors or have any effect"). The advance publicity and public discussion of the tax-limiting provisions, as an initiative measure, were massive, and the several elements of the enactment were reasonably germane to, and functionally related in furtherance of, a common underlying purpose, namely, effective real property tax relief.

(11)

Initiative and Referendum § 6--State Elections--Initiative Measures-- Single-subject Requirement--Purpose.

Minimization of the risk of voter confusion and deception was one of the purposes of the single-subject requirement of [Cal. Const., art. II, § 8](#), *213 subd. (d) (providing that an

"initiative measure embracing more than one subject may not be submitted to the electors or have any effect").

(12a, 12b, 12c, 12d)

Property Taxes § 7--Constitutional Provisions; Statutes and Ordinances--Equal Protection--Valuation of Property-- Date of Acquisition Versus Current Value.

The provision in [Cal. Const., art. XIII A, § 2](#) (requiring property acquired prior to 1975 to be assessed and taxed at its full cash value as shown on the 1975-1976 tax bill, and property acquired thereafter to be assessed and taxed according to its appraised value at the time of acquisition), did not constitute an arbitrary discrimination in violation of the equal protection clause of [U.S. Const., 14th Amend.](#) There is no legal requirement that property of equal current value must be taxed equally, and the rollback of an assessed value to the 1975-1976 fiscal year was comparable to the use of a "grandfather" clause similar to legislative provisions that are routinely upheld by the courts. The rational basis underlying [§ 2](#), satisfying the essential demand of equal protection, includes the theory that the annual taxes that a property owner must pay should bear some rational relationship to the original cost of the property, predicated on the owner's free and voluntary act of purchase, rather than relate to an unforeseen, perhaps unduly inflated, current value.

(13)

Appellate Review § 126--Constitutional Questions.

Generally, courts will not reach constitutional questions unless absolutely necessary to a disposition of the case before them.

(14a, 14b)

Constitutional Law § 82--Equal Protection--Classification-- Legislative Power and Discretion--Taxation.

Where taxation is concerned and no specific federal right, apart from equal protection, is imperiled, the states have large leeway in making classifications and drawing lines that in their judgment produce reasonable systems of taxation. The latitude of discretion is notably wide in the classification of property for purposes of taxation and the granting of partial or total exemptions upon grounds of policy.

(15a, 15b)

Constitutional Law § 83--Equal Protection--Classification-- Legislative Power and Discretion--Taxation--Judicial Review.

So long as a system of state taxation is supported by a rational basis, and is not palpably arbitrary, it will be upheld despite *214 the absence of a precise, scientific uniformity. The fact that a tax law discriminates in favor of a certain class does not make it arbitrary if the discrimination is founded upon a reasonable distinction, or difference in state policy, not in conflict with the federal Constitution.

[See [Cal.Jur.3d, Constitutional Law, § 178](#); [Am.Jur.2d, State and Local Taxation, § 150](#) et seq.]

(16)

Constitutional Law § 82--Equal Protection--Classification--Legislative Power and Discretion--Taxation.

A state is not limited to ad valorem taxation. It may impose different specific taxes upon different trades and professions and may vary the rate of excise upon various products. In levying such taxes, the state is not required to resort to close distinctions or to maintain a precise, scientific uniformity with reference to composition, use, or value.

(17)

Constitutional Law § 97--Equal Protection--Classification--Bases-- Voting Rights--Limitation on Local Taxing Power--Two-thirds Vote by Electorate.

[Cal. Const., art. XIII A, § 4](#) (requiring that any “special taxes” imposed by a city, county, or special district must be approved by a two-thirds vote of its qualified electors), did not violate the equal protection clause of [U.S. Const., 14th Amend.](#) Because persons who vote in favor of tax measures may not be deemed to represent a definite, identifiable class, equal protection principles do not forbid “debasement” their vote, or “favoring” the negative vote, by requiring a two-thirds approval of such measures.

(18a, 18b)

Constitutional Law § 52--First Amendment and Other Fundamental Rights of Citizens--Scope and Nature--Right to Travel--Property Taxes--Change From Current Value to Acquisition Value.

The right to travel was not unconstitutionally impaired by the provision in Cal. Const., art. XIII A, changing the assessment and taxation of real property from a current value system to an acquisition value method. Under the former system, prospective purchasers of real property might well have been deterred from purchasing (thereby impairing their right to travel) by reason of the unpredictable nature of future

property tax liability resulting from unlimited inflationary pressures.

(19)

Property Taxes § 31--Assessment--Change From Current Value to Acquisition Value--Purpose.

The change from a current value *215 system to an acquisition value method provided by [Cal. Const., art. XIII A, § 2](#) (requiring property acquired prior to 1975 to be assessed and taxed at its full cash value as shown on the 1975-1976 tax bill, and property acquired thereafter to be assessed and taxed according to its appraised value at the time of acquisition), was intended to benefit all property owners, past and future, resident and nonresident, by reducing inflationary increases in their assessments, by limiting tax rates, and by permitting the taxpayer to make more careful and accurate predictions of future tax liability.

(20)

Constitutional Law § 72--Contract Rights, Vested Rights, and Retrospective Laws--Right to Contract and Impairment of Contract-- Constitutional Amendment Limiting Taxing Power--Premature Challenge.

A challenge by various governmental agencies and concerned citizens to Cal. Const., art. XIII A (changing the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments), on the asserted basis that the operation of the enactment would result in the default of certain preexisting contractual obligations (including pension and health plan benefits, labor and other municipal contracts, and redevelopment agency bonds), and would therefore result in an unlawful impairment of contract ([U.S. Const., art. I, § 10, cl. 1](#)), was premature, even assuming petitioners had the standing to assert the claim. The enactment, on its face, neither directly repudiated any express covenant with municipal obligees nor immediately impaired any contract right, and petitioners failed to produce evidence of any present, specific, and substantial impairment affecting them or any specified municipal obligees, bondholders, or creditors.

(21a, 21b)

Initiative and Referendum § 6--State Elections--Initiative Measures--Title and Summary of Purpose--Sufficiency--Initiative Measure Limiting Taxing Power.

With respect to the initiative measure adopted by the voters as Cal. Const., art. XIII A, changing the previous system of real

property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments, both the title “Initiative Constitutional Amendment-Property Tax Limitation” (though imprecise as implying that only property taxes would be affected) and the summary (though imprecise for failing to mention that [§ 4](#) of the measure required that any “special taxes” imposed by a city, ***216** county, or special district must be approved by a two-thirds vote of its qualified electors) substantially complied with the law, especially in view of their subsequent correction in all but two counties and in the voters' pamphlet, and in view of the extensive public debates on the measure in all of its several aspects.

(22)

Initiative and Referendum § 6--State Elections--Initiative Measures-- Title and Summary of Purpose--Object.

The requirements that, prior to the circulation of an initiative measure, the Attorney General prepare a title and summary of its chief purposes and points, not exceeding 100 words ([Cal. Const., art. II, § 10](#), subd. (d); [Elec. Code, §§ 3502, 3503](#)), and that the statement be true and impartial, and not argumentative or likely to create prejudice for or against the measure ([Elec. Code, § 3531](#)), were designed to prevent the public from being misled by inaccurate information.

(23)

Initiative and Referendum § 6--State Elections--Initiative Measures-- Title and Summary of Purpose--Sufficiency.

Generally, the title and summary of an initiative measure, prepared by the Attorney General before its circulation, need not contain a complete catalogue or index of all of the measure's provisions, and are presumed to be accurate. Substantial compliance with the “chief purpose and points” provision ([Elec. Code, §§ 3502, 3503](#)) is sufficient, as is the title, if reasonable minds may differ as to its sufficiency.

(24a, 24b, 24c)

Constitutional Law § 10--Construction of Constitutions--Constitutional Amendment Limiting State and Local Taxing Powers--Validity Despite Vague Terms.

Cal. Const., art. XIII A (changing the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments), though imprecise and ambiguous in a number of particulars, was not so vague and uncertain in its essential terms as to render it void and inoperable. As with other provisions of the Constitution, it would

necessarily and over a period of time require judicial, legislative, and administrative construction, and was already being implemented by extensive legislation and regulations that, if judicially challenged, could be dealt with on a case-by-case basis.

(25)

Constitutional Law § 11--Construction of Constitutions--Liberality and Flexibility.

Because a written constitution is intended as, and ***217** is, the mere framework according to whose general outlines specific legislation must be framed and modeled, and is therefore necessarily couched in general terms or language, it is not to be interpreted according to narrow or super-technical principles, but liberally and on broad general lines, so that it may accomplish in full measure the objects of its establishment and so carry out the great principles of government.

(26)

Constitutional Law § 10--Construction of Constitutions--To Uphold Validity.

In the abstract, provisions in a constitution should be interpreted when possible to uphold their validity, and courts should construe them to give specific content to terms that might otherwise be unconstitutionally vague.

(27)

Constitutional Law § 12--Construction of Constitutions--Background, Purpose, and Intent of Enactment.

A constitutional amendment should generally be construed in accordance with the natural and ordinary meaning of its words, but the literal language may be disregarded to avoid absurd results and to fulfill the apparent intent of the framers.

(28)

Constitutional Law § 16--Construction of Constitutions--Contemporaneous and Long-standing Construction-By Legislature and Administration.

Apparent ambiguities in a new enactment may frequently be resolved by the contemporaneous construction of the Legislature or of the administrative agencies charged with implementing it; additionally, when the enactment follows voter approval, the ballot summary and arguments and analysis presented to the electorate may be helpful in determining the probable meaning of uncertain language.

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RICHARDSON, J.

In these consolidated cases, we consider multiple constitutional challenges to an initiative measure which was adopted by the voters of this state at the June 1978 primary election. This measure, designated on the ballot as Proposition 13 and commonly known as the Jarvis-Gann initiative, added article XIII A to the California Constitution. Its provisions are set forth in their entirety in the appendix to this opinion. (See *post*, at p. 257.) As will be seen, the new article changes the previous system of real property taxation and tax procedure by imposing important limitations upon the assessment and taxing powers of state and local governments.

*219

Petitioners, and the amici supporting them, are various governmental agencies and concerned citizens, each of whom has alleged actual or potential adverse effects resulting from the adoption and ultimate operation of the article. (Hereafter we refer jointly to all petitioners and their amici as petitioners, and refer to all respondents herein and those amici urging the validity of XIII A as respondents.) (1) The issues herein presented are of great public importance and should be resolved promptly. Under well settled principles petitioners, accordingly, have properly invoked the exercise of our original jurisdiction. (See *California Housing Finance Agency v. Elliott* (1976) 17 Cal.3d 575, 580 [131 Cal.Rptr. 361, 551 P.2d 1193]; *County of Sacramento v. Hickman* (1967) 66 Cal.2d 841, 845 [59 Cal.Rptr. 609, 428 P.2d 593].)

(2) We stress initially the limited nature of our inquiry. We do not consider or weigh the economic or social wisdom or general propriety of the initiative. Rather, our sole function is to evaluate article XIII A legally in the light of established constitutional standards. We further emphasize that we examine only those principal, fundamental challenges to the validity of article XIII A as a whole. In doing so we reaffirm and readopt an analytical technique previously used by us in adjudicating attacks upon similar enactments, in which "Analysis of the problems which may arise respecting the interpretation or application of particular provisions of the act should be deferred for future cases in which those provisions are more directly challenged." (*County of Nevada v. MacMillen* (1974) 11 Cal.3d 662, 666 [114 Cal.Rptr. 345, 522 P.2d 1345] [declaratory relief action to determine validity of the 1973 conflict of interest law, *Gov. Code, § 3600* et seq.].) As will appear, we have concluded that, notwithstanding the existence of some unresolved uncertainties, as to which we reserve judgment, the article nevertheless survives each of the serious and substantial constitutional attacks made by petitioners.

(3) It is a fundamental precept of our law that, although the legislative power under our constitutional framework is firmly vested in the Legislature, "the people reserve to themselves the powers of initiative and referendum." (*Cal. Const., art. IV, § 1.*) It follows from this that, "[the] power of initiative must be liberally construed ... to promote the democratic process." (*San Diego Bldg. Contractors Assn. v. City Council* (1974) 13 Cal.3d 205, 210, fn. 3 [*220 118 Cal.Rptr. 146, 529 P.2d 570, 72 A.L.R.3d 973] and cases cited; see *Associated Home Builders etc., Inc. v. City of Livermore* (1976) 18 Cal.3d 582, 591 [135 Cal.Rptr. 41, 557 P.2d 473].) Bearing in mind the foregoing interpretive aid,

we briefly review the basic provisions of article XIII A. We caution that, save only as to the specific constitutional issues resolved, our summary description and interpretation of the article and of the implementing legislation and regulations do not preclude subsequent challenges to the specific meaning or validity of those enactments.

The new article contains four distinct elements. The first imposes a limitation on the *tax rate* applicable to real property: “The maximum amount of any ad valorem tax on real property shall not exceed one percent (1%) of the full cash value of such property” (§ 1, subd. (a).) (This limitation is made specifically inapplicable, under subd. (b), to property taxes or special assessments necessary to pay prior indebtedness approved by the voters.) The second is a restriction on the *assessed value* of real property. [Section 2](#), subdivision (a), provides: “The full cash value means the County Assessors valuation of real property as shown on the 1975-76 tax bill under ‘full cash value,’ or thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment” Subdivision (b) permits a maximum 2 percent annual increase in “the fair market value base” of real property to reflect the inflationary rate.

The third feature limits the method of changes in *state* taxes: “From and after the effective date of this article, any changes in State taxes enacted for the purpose of increasing revenues collected pursuant thereto whether by increased rates or changes in methods of computation must be imposed by an Act passed by not less than two-thirds of all members ... of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed.” (§ 3.) The fourth element is a restriction upon *local* taxes: “Cities, Counties and special districts, by a two-thirds vote of the qualified electors of such district, may impose special taxes on such district, except ad valorem taxes on real property or a transaction tax or sales tax on the sale of real property within such City, County or special district.” (§ 4.) (The remaining sections relate to the effective dates (§ 5) and severability (§ 6) of the provisions of the new article.)

We examine petitioners' specific contentions. *221

1. Constitutional Revision or Amendment

(4a) The petitioners' primary argument is that article XIII A represents such a drastic and far-reaching change in the nature and operation of our governmental structure that it

must be considered a “revision” of the state Constitution rather than a mere “amendment” thereof. (5) As will appear, although the voters may accomplish an amendment by the initiative process, a constitutional revision may be adopted only after the convening of a constitutional convention and popular ratification or by legislative submission to the people. Because a revision may not be achieved through the initiative process, petitioners' first contention strikes at the very validity of article XIII A in its inception and in its entirety. Were we to conclude that the Proposition 13 initiative constituted a revision not an amendment, that would end our inquiry; the initiative would be invalid for its failure to meet the constitutional requirements of a revision.

The applicable constitutional provisions are specific. Article XVIII (entitled “Amending and Revising the Constitution”) presently provides in full:

“[Sec. 1.](#) *The Legislature* by rollcall vote entered in the journal, two-thirds of the membership of each house concurring, *may propose an amendment or revision* of the Constitution and in the same manner may amend or withdraw its proposal. Each amendment shall be so prepared and submitted that it can be voted on separately.

“[Sec. 2.](#) *The Legislature* by rollcall vote entered in the journal, two-thirds of the membership of each house concurring, *may submit* at a general election the question whether to call a convention to *revise* the Constitution. If the majority vote yes on that question, within 6 months the Legislature shall provide for the convention. Delegates to a constitutional convention shall be voters elected from districts as nearly equal in population as may be practicable.

“[Sec. 3.](#) *The electors may amend* the Constitution *by initiative*.

“[Sec. 4.](#) A proposed amendment or revision shall be submitted to the electors and if approved by a majority of votes thereon takes effect the day after the election unless the measure provides otherwise. If provisions of 2 or more measures approved at the same election conflict, those of the *222 measure receiving the highest affirmative vote shall prevail.” (Italics added.)

We think it significant that prior to 1962 a constitutional revision could be accomplished *only* by the elaborate procedure of the convening of, and action by, a constitutional convention ([art. XVIII, § 2](#)). This fact suggests that the term “revision” in section XVIII originally was intended to refer to

a substantial alteration of the entire Constitution, rather than to a less extensive change in one or more of its provisions. (6) Many years ago, in *Livermore v. Waite* (1894) 102 Cal. 113, 118-119 [36 P. 424], we described the fundamental distinction between revision and amendment as follows: “The very term ‘constitution’ implies an instrument of a permanent and abiding nature, and the provisions contained therein for its revision indicate the will of the people that the underlying principles upon which it rests, as well as the substantial entirety of the instrument, shall be of a like permanent and abiding nature. On the other hand, the significance of the term ‘amendment’ implies such an addition or change within the lines of the original instrument as will effect an improvement, or better carry out the purpose for which it was framed.”

While the Constitution itself does not specifically distinguish between revision and amendment, we are considerably aided in an evaluation of petitioners' primary argument by our earlier analysis of the issue in *McFadden v. Jordan* (1948) 32 Cal.2d 330 [196 P.2d 787] (cert den., 336 U.S. 918 [93 L.Ed. 1080, 69 S.Ct. 640]). In *McFadden*, we struck down an initiative measure which would have added 21,000 words to our then existing 55,000-word Constitution. We held that the initiative was “revisory rather than amendatory in nature,” because of the “far reaching and multifarious substance of the measure ...” (p. 332) which dealt with such varied and diverse subjects as retirement pensions, gambling, taxes, oleomargarine, healing arts, civic centers, senate reapportionment, fish and game, and surface mining. We noted that the proposal would have repealed or substantially altered at least 15 of the 25 articles which then comprised the Constitution. (P. 345.)

We held in *McFadden* that the measure under scrutiny therein was clearly a revision, both because of its varied aspects and because of the “substantial curtail[ment]” of governmental functions which it would cause. (Pp. 345-346.) For example, one provision would have created a state pension commission with comprehensive governmental powers to be exercised by five named commissioners. We concluded that “The *223 delegation of far reaching and mixed powers to the commission, largely, if not almost entirely in effect, unchecked, places such commission substantially beyond the system of checks and balances which heretofore has characterized our governmental plan.” (P. 348.)

In addition, although the subject of taxation was only one of many covered by the *McFadden* initiative, nevertheless we observe that the proposed taxation amendment would

have accomplished, *by itself*, a far more substantial change in the state's taxation scheme than that effected by Proposition 13. The far reaching nature of the *McFadden* measure is demonstrated by the fact that it not only would have destroyed the power of cities and counties to tax and regulate their own budgets and expenditures (p. 344), but also the 2 percent gross receipts tax proposed therein was to have been *the only tax* permitted to any agency on real or personal property, or on any business enterprises. (Pp. 336-337.)

Finally, we stressed in *McFadden* that “The proposal is offered as a *single amendment* but it obviously is multifarious. It does not give the people an opportunity to express approval or disapproval severally as to each major change suggested; rather does it, apparently, have the purpose of aggregating for the measure the favorable votes from electors of many persuasions who, wanting strongly enough any one or more propositions offered, might grasp at that which they want, tacitly accepting the remainder. Minorities favoring each proposition severally might, thus aggregated, adopt all. Such an appeal might well be proper in voting on a *revised constitution*, proposed under the safeguards provided for such a procedure, but it goes beyond the legitimate scope of a single amendatory article.” (P. 346, italics in original.)

(7) Taken together our *Livermore* and *McFadden* decisions mandate that our analysis in determining whether a particular constitutional enactment is a revision or an amendment must be both quantitative and qualitative in nature. For example, an enactment which is so extensive in its provisions as to change directly the “substantial entirety” of the Constitution by the deletion or alteration of numerous existing provisions may well constitute a revision thereof. However, even a relatively simple enactment may accomplish such far reaching changes in the nature of our basic governmental plan as to amount to a revision also. In illustration, the parties herein appear to agree that an enactment which purported to vest all judicial power in the Legislature would amount to a revision without regard either to the length or complexity of the measure or the number of existing articles or sections affected by such change. *224

(4b) In both its quantitative and qualitative aspects, however, article XIII A appears demonstrably less sweeping than the initiative measure at issue in *McFadden*. As noted above, the *McFadden* measure consisted of 21,000 words and covered many different subjects, whereas XIII A comprises approximately 400 words and, as we discuss more fully below, is limited to the single subject of taxation (with

particular emphasis upon real property taxation). Although petitioners suggest that 8 articles and 37 sections of the existing Constitution may be affected by the new article, our analysis suggests that the article's quantitative effect is less extensive.

Our review of petitioners' description of numerous asserted changes indicates that the claims may be based upon possible errors in petitioners' interpretation of the new article. For example, they argue that at least three constitutional articles will be modified by the new requirement that the available real property tax revenues be apportioned "to the districts *within* the counties" (§ 1, subd. (a), italics added), thereby excluding those districts which encompass more than a single county. However, implementing legislation has included such multi-county districts within the tax allocation scheme. (See Gov. Code, § 26912, subd. (d).) In addition, petitioners assume that article XIII A will annul or amend the various "home rule" provisions of the state Constitution (art. XI, §§ 3-7), an assumption we discuss and reject below. Finally, we note that the majority of those changes emphasized by petitioners pertain to a single existing constitutional provision, article XIII, which already contains 33 separate sections dealing with the subject of taxation and assessment procedure. Since article XIII doubtless was premised upon the assumption that local taxation would be unrestricted by any tax rate and assessment limitations such as those adopted by XIII A, it is not surprising that many of these sections may be said to be affected by the new taxation scheme. Nevertheless, we decline to hold that article XIII A accomplished a revision of the Constitution by reason of its *quantitative* effect upon the existing provisions of that document.

Petitioners insist, however, that the new article also will have far reaching *qualitative* effects upon our basic governmental plan, in two principal particulars, namely, (1) the loss of "home rule" and (2) the conversion of our governmental framework from "republican" to "democratic" form. A close analysis of XIII A convinces us that its probable effects are not as fundamentally disruptive as petitioners suggest.

a.) *Loss of home rule.* (8) The principle of home rule involves, essentially, the ability of local government (technically, chartered cities, *225 counties, and cities and counties) to control and finance local affairs without undue interference by the Legislature. (See, e.g., Weekes v. City of Oakland (1978) 21 Cal.3d 386, 399-400 [conc. opn.], 422-426 [dis. opn.] [146 Cal.Rptr. 558, 579 P.2d 449], and authorities cited; Bishop v. City of San Jose (1969) 1 Cal.3d 56, 61-63

[81 Cal.Rptr. 465, 460 P.2d 137].) (4c) It is undeniably true that a constitutional limitation upon prevailing local taxation rates and assessments will have a potentially limiting effect upon the management and resolution of local affairs. Reduced taxes may be expected to generate reduced revenues, inevitably resulting in a corresponding curtailment of locally financed services and programs. To conclude, however, that the mere imposition of tax limitations, per se, accomplishes a constitutional revision would in effect bar the people from ever achieving *any* local tax relief through the initiative process. Petitioners have cited to us no authorities which support such a broad proposition, and our own research, disclosing only one case, indicates a contrary rule. (See School Dist. of City of Pontiac v. City of Pontiac (1933) 262 Mich. 338 [247 N.W. 474, 477] [initiative measure adopting a 1 1/2 percent tax limitation on assessed value, and requiring two-thirds approval of electorate to increase taxes, was a constitutional amendment, not a revision].)

Petitioners insist, however, that article XIII A has an additional effect beyond the mere limitation of tax revenues, namely, the vesting in the Legislature of the power to allocate to local governmental agencies the revenues derived from real property taxation. It is suggested that, by reason of the operation of section 1, subdivision (a), of article XIII A (allocating the revenues from the 1 percent maximum tax "according to law"), the Legislature is thereby empowered, at its whim, and upon whatever conditions it may impose, to pick and choose among the local agencies, rewarding "deserving" agencies with substantial amounts while penalizing others by reduced awards. Certainly nothing on the face of the article, however, abrogates home rule to this extent, or discloses any intent to undermine or subordinate preexisting constitutional provisions on that subject (Cal. Const., art. XI, §§ 3-7). Indeed, present legislative implementation of article XIII A reveals that such a result has not ensued. For several reasons, petitioners' fears in this connection seem illusory and ill-founded.

First, it is clear that even prior to the adoption of article XIII A, the Constitution authorized the Legislature to "provide maximum property tax rates and bonding limits for local government" (art. XIII, § 20), to *226 provide similar limits for school districts (*id.*, § 21), and to grant exemptions from real property taxation in favor of certain specified classes of property (*id.*, § 4). Thus, from the standpoint of legislative control, the new article appears potentially no more threatening to home rule than these preexisting constitutional limitations.

Second, wholly unlike the *McFadden* initiative, article XIII A neither destroys nor annuls the taxing power of local agencies. Although revenues derived from real property taxes may well be substantially reduced by reason of the new tax rate and assessment restrictions (§§ 1, 2), local agencies retain full authority to impose “special taxes” (other than certain real property taxes) if approved by a two-thirds vote of the “qualified electors.” (§ 4.) Although the interpretation of the foregoing quoted provisions is not presently before us, it seems evident that section 4 assists in preserving home rule principles by leaving to local voters the decision whether or not to authorize “special” taxes to support local programs.

Third, article XIII A does not by its terms empower the Legislature to direct or control local budgetary decisions or program or service priorities, and we have no reason to assume that the Legislature will attempt to exercise its powers in such a manner as to interfere with local decision-making. Certainly, local agencies retain the same constitutional and statutory authority over municipal affairs which they possessed and exercised prior to the adoption of the new article. The mere fact of reduction in local revenues does not lead us necessarily to the conclusion that local agencies have forfeited control over allocations and disbursements of their remaining funds.

Finally, recent implementing legislation (Stats. 1978, chs. 292, 332) confirms the Legislature's present intention to preserve home rule and local autonomy respecting the allocation and expenditure of real property tax revenues. Although this legislation is, of course, subject to future change and, accordingly, is not conclusive on the point, the present pattern of legislative implementation of article XIII A appears to refute petitioners' premise that the article necessarily and inevitably has resulted or will result in the loss of home rule. Among other provisions, the Legislature has enacted [Government Code section 26912](#) which contains the formulae whereby county auditors must allocate to various local agencies and school districts within county boundaries the revenues to be derived from the 1 percent maximum real property tax during the fiscal *227 year 1978-1979. Although these formulae are somewhat complex, in general they aim at allocating these funds on a *pro rata* basis, without imposing any condition whatever regarding their ultimate use. Each “local agency” (city, county, city and county, and special district) is to receive a proportionate share based upon its average property tax revenues during the previous three fiscal years. ([Gov. Code, § 26912](#), subs. (a), (b)(1).) Similarly,

each school district, county superintendent of schools, and community college district, is to receive a proportionate share based upon the entity's average property tax revenues for the 1977-1978 fiscal year. (*Id.*, subd. (b)(2).)

The foregoing tax allocation scheme is evidently intended to assure that each local agency and school district will receive approximately the same percentage of the total tax revenues as it had previously received. Thus, contrary to petitioners' fears and assumptions, the adoption of XIII A need not necessarily result either in abrogation of home rule in this state or in the delegation to the Legislature of the power to make those revenue and budgetary decisions formerly left to local discretion and control. (Other sections of the new legislation contain formulae for allocating the state's surplus tax funds. These provisions do not relate to the distribution of revenues from real property taxation and, accordingly, they are not relevant to our present discussion, except insofar as the availability of these funds may minimize the impact of the reduction in local tax revenues.)

b.) *Loss of republican form of government.* Continuing their thesis that XIII A is a constitutional revision not an amendment under our *McFadden* holding, petitioners next maintain that the operation of the article, and particularly [section 4](#) thereof, will result in a change from a “republican” form of government (i.e., lawmaking by elected representatives) to a “democratic” governmental plan (i.e., lawmaking directly by the people).

Contrary to petitioners' assertion, however, we are convinced that article XIII A is more modest both in concept and effect and does not change our basic governmental plan. Following the adoption of article XIII A both local and state government will continue to function through the traditional system of elected representation. Other than in the limited area of taxation, the authority of local government to enact appropriate laws and regulations remains wholly unimpaired. The requirement of [section 4](#) that any “special taxes” must be approved by a two-thirds vote of the “qualified electors” restricts but does not abolish the power of local *228 governments in the raising of revenue. We decline to hold that such a “super-majority” requirement, the two-thirds vote, standing alone and limited to the subject of taxes, constitutes a substantial constitutional revision which cannot be accomplished through an initiative. Similar voting requirements in financial matters have not been uncommon. For example, prior to the adoption of article XIII A, our Constitution required the assent of two-thirds of the qualified

electors to incur indebtedness exceeding in any year the income and revenue provided for that year. (Art. XVI, § 18.) We have, within another context, previously described other examples of constitutional provisions sanctioning deviations from simple “majority rule.” (See *Westbrook v. Mihaly* (1970) 2 Cal.3d 765, 797-798, fn. 64 [87 Cal.Rptr. 839, 471 P.2d 487].)

It should be borne in mind that notwithstanding our continuing representative and republican form of government, the initiative process itself adds an important element of direct, active, democratic contribution by the people. (See *In re Pfahler* (1906) 150 Cal. 71, 77-78 [88 P. 270] [holding that the constitutional guarantee of a republican form of government is inapplicable to the local governmental level].) We thus conclude that [section 4 of article XIII A](#), and its requirement of substantial popular support, beyond that of a bare majority for the approval and adoption of “special” local taxes adds nothing novel to the existing governmental framework of this state.

In summary, we believe that it is apparent that [article XIII A](#) will result in various substantial changes in the operation of the former system of taxation. Yet, unlike the alterations effected by the *McFadden* initiative discussed above, the [article XIII A](#) changes operate functionally within a relatively narrow range to accomplish a new system of taxation which may provide substantial tax relief for our citizens. We decline to hold that such a limited purpose cannot be achieved directly by the people through the initiative process. As succinctly and graphically expressed a number of years ago in a study of the California procedure, “... the initiative is in essence a *legislative battering ram* which may be used to tear through the exasperating tangle of the traditional legislative procedure and strike directly toward the desired end. Virtually every type of interest-group has on occasion used this instrument. It is deficient as a means of legislation in that it permits very little balancing of interests or compromise, but it was designed primarily for use in situations where the ordinary machinery of legislation had utterly failed in this respect. It has served, with varying degrees of efficacy, as a vehicle for the advocacy of action *229 ultimately undertaken by the representative body.” (Key & Crouch, *The Initiative and the Referendum in Cal.* (1939) p. 485, italics added.)

The foregoing language, written almost 40 years ago, seems remarkably prophetic given the apparent historic origins of [article XIII A](#). Although we express neither approval nor disapproval of the article from the standpoint of sound fiscal

or social policy, we find nothing in the Constitution's revision and amendment provisions ([art. XVIII](#)) which would prevent the people of this state from exercising their will in the manner herein accomplished. Indeed, if the foregoing description of the initiative as a “legislative battering ram” is accurate it would seem anomalous to insist, as petitioners in effect do, that the sovereign people cannot themselves act directly to adopt tax relief measures of this kind, but instead must defer to the Legislature, their own representatives. We conclude that [article XIII A](#) fairly may be deemed a constitutional amendment, not a revision.

2. The Single-subject Requirement

(9a) Our Constitution provides that “An initiative measure embracing more than one subject may not be submitted to the electors or have any effect.” ([Art. II, § 8](#), subd. (d).) ([10a](#)) Acknowledging that its general reference is to the subject of taxation, petitioners nonetheless argue that [article XIII A](#) covers many subjects and, indeed, is so sweeping and extensive in its practical effect and import as to encompass nearly the entirety of “government.” In this regard, their argument is somewhat related to their prior contention that [article XIII A](#) constitutes a revision of the Constitution, rather than an amendment. Accordingly, many of our previous observations regarding the revision and amendment procedures have application to their one-subject assertions.

The single-subject requirement of [article II](#) was adopted in 1948, possibly in response to the many-faceted initiative measure which we invalidated in *McFadden, supra*. Only a year later, in *Perry v. Jordan* (1949) 34 Cal.2d 87 [207 P.2d 47], we had occasion to construe the new constitutional provision. In *Perry*, we adopted and applied the “reasonably germane” test previously developed by earlier decisions construing a similar single-subject restriction applicable to legislation (see [Cal. Const., art. IV, § 9](#)). We quoted with approval the following language from an earlier opinion in which we had upheld the legislative adoption of the Probate Code in a single enactment: “... [W]e are of the view that the [single-subject] provision is not to receive a narrow or technical construction *230 in all cases, but is to be construed liberally to uphold proper legislation, *all parts of which are reasonably germane*. [Citation.] The provision was not enacted to provide means for the overthrow of legitimate legislation. [Citation.] [¶] Numerous provisions, *having one general object*, if fairly indicated in the title, may be united in one act. Provisions governing projects so related and interdependent as to constitute a *single scheme*

may be properly included within a single act. [Citation.] The legislature may insert in a single act all legislation *germane* to the general subject as expressed in its title and within the field of legislation suggested thereby. [Citation.] ... A provision which conduces to the act, or which is auxiliary to and promotive of its main purpose, or has a necessary and natural connection with such purpose is *germane* within the rule” (*Evans v. Superior Court* (1932) 215 Cal. 58, 62-63 [8 P.2d 467], italics added.)

In *Perry*, the challenged initiative measure had as its general subject the repeal of constitutional provisions governing aid to the aged and blind. We noted that the repeal measure would have several collateral effects, including (1) vesting the Legislature with power to reduce pension payments, (2) giving the counties the responsibility of administering pension programs, (3) imposing on relatives liability for benefits, and (4) raising the minimum age qualification for benefits. (*Perry v. Jordan, supra*, 34 Cal.2d at pp. 93-94.) Nonetheless, and referring to the foregoing features of the initiative, we unanimously rejected the single-subject challenge, observing that “All those things obviously pertain to any plan—single subject—of aid to the needy aged and blind. They are merely administrative details.” (*Id.*, at p. 94.)

(9b) We thus draw from *Perry* its primary lesson that an initiative measure will not violate the single-subject requirement if, despite its varied collateral effects, all of its parts are “reasonably germane” to each other. We note also the existence of a more restrictive test recently proposed in the dissenting opinion of Justice Manuel in *Schmitz v. Younger* (1978) 21 Cal.3d 90, 100 [145 Cal.Rptr. 517, 577 P.2d 652], wherein he suggested that “an initiative’s provisions must be functionally related in furtherance of a common underlying purpose.” (10b) Our analysis of [article XIII A](#) convinces us that the several elements of that article satisfy either standard in that they are both reasonably germane to, and functionally related in furtherance of, a common underlying purpose, namely, effective real property tax relief. *231

As previously noted, [article XIII A](#) consists of four major elements, a real property *tax rate* limitation (§ 1), a real property *assessment* limitation (§ 2), a restriction on *state taxes* (§ 3), and a restriction on *local taxes* (§ 4). Although petitioners insist that these four features constitute separate *subjects*, we find that each of them is reasonably interrelated and interdependent, forming an interlocking “package” deemed necessary by the initiative’s framers to assure effective real property tax relief. Since the total real

property tax is a function of both rate and assessment, [sections 1](#) and [2](#) unite to assure that *both* variables in the property tax equation are subject to control. Moreover, since any tax savings resulting from the operation of [sections 1](#) and [2](#) could be withdrawn or depleted by additional or increased state or local levies of other than property taxes, [sections 3](#) and [4](#) combine to place restrictions upon the imposition of such taxes. Although [sections 3](#) and [4](#) do not pertain solely to the matter of *property* taxation, both sections, in combination with [sections 1](#) and [2](#), are reasonably germane, and functionally related, to the general subject of property tax relief.

(11) Among other purposes, the single-subject requirement was enacted to minimize the risk of voter confusion and deception. (*Schmitz v. Younger, supra*, 21 Cal.3d 90, 97 [dis. opn.]) (10c) We may take judicial notice of the fact that the advance publicity and public discussion of [article XIII A](#) and its predicted effects were massive. (*Evid. Code, § 452*, subd. (g).) The measure received as much public attention as any other ballot proposition in recent years. These circumstances would seem to dilute the risk of voter confusion or deception by reason of the inclusion of the four principal features of the article in one ballot proposition. Moreover, the official voters pamphlet mailed to all registered voters contained an elaborate and detailed explanation of the various elements of Proposition 13. (See *Morris v. Priest* (1971) 14 Cal.App.3d 621, 625 [92 Cal.Rptr. 476].)

Petitioners contend, however, that adoption of XIII A violated a second important purpose underlying the single-subject requirement, namely, to avoid “exploiting” the initiative process by combining in a single measure several provisions which might not have commanded majority support if considered separately. (See *McFadden v. Jordan, supra*, 32 Cal.2d 330, 346.) Petitioners rely upon cases from several other jurisdictions expressing this principle. For example, in *Kerby v. Luhrs* (1934) 44 Ariz. 208 [36 P.2d 549], the court struck down an initiative measure which would have added to the Arizona Constitution such diverse provisions as (1) a new tax on copper production, (2) a new method of valuing public utility *232 property, and (3) a new state tax commission. According to the court in *Kerby*, any of these provisions, singly, could have been adopted “without the slightest need of adopting” the others. (P. 554.) Although each provision related to the general subject of “taxation,” the *Kerby* court found no other connection between them, characterizing the measure as “logrolling of the worst type” (P. 555.)

Unlike the enactment condemned in *Kerby*, however, the four elements of [article XIII A](#) not only pertain to the general subject of taxation, but also are reasonably interdependent and functionally related to each other. More importantly, no apparent “logrolling” is involved in this case. Each of the four basic elements of [article XIII A](#) was designed to interlock with the others to assure an effective tax relief program.

Petitioners assert that each of the four separate elements of [article XIII A](#) might not have been approved had each element appeared separately on the ballot. They speculate that various classes of voters may have favored some, but not all, of these elements; petitioners would require a showing that *each* of the several provisions of an initiative measure is capable of gaining approval by the electorate, independent of the other provisions. We are unable to accept such a contention, concluding that petitioners' proposed single-subject test is far too strict, and lacks support in the authorities. Aside from the obvious difficulty of ever establishing satisfactorily such “independent voter approval,” this standard would defeat many legitimate enactments containing isolated, arguably “unpopular,” provisions reasonably deemed necessary to the integrated functioning of the enactment as a whole. We avoid an overly strict judicial application of the single-subject requirement, for to do so could well frustrate legitimate efforts by the people to accomplish integrated reform measures. As we have previously observed, the initiative procedure itself was specifically intended to accomplish such kinds of reforms through its function as a “legislative battering ram.” We should dull or blunt its force only for reasons that are constitutionally mandated, and accordingly we conclude that [article XIII A](#) does not violate the single-subject requirement of [article II](#).

3. Equal Protection of the Laws

Petitioners' equal protection argument against [article XIII A](#) is directed at two aspects of the article. They contend that (1) the “rollback” of assessed valuation ([§ 2](#), subd. (a)) assertedly will result in invidious discrimination between owners of similarly situated property, and that (2) *233 the two-third voting requirement for enacting “special taxes” by local agencies ([§ 4](#)) unduly discriminates in favor of those voters casting negative votes. As will appear, we hold that neither contention has merit.

a.) *1975-1976 Assessment Date.* (12a) As we have noted, [section 2](#), subdivision (a), of [article XIII A](#) provides that “The full cash value [to which the 1 percent maximum tax applies] means the County Assessors valuation of real

property as shown on the 1975-76 tax bill under ‘full cash value,’ or thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment. All real property not already assessed up to the 1975-76 tax levels may be reassessed to reflect that valuation.” ([§ 2](#), subd. (b), permits an annual 2 percent maximum increase on the “fair market value base” of property, to reflect the inflationary rate.) Petitioners emphasize that, by reason of the “rollback” of assessed value to the 1975-1976 fiscal year, two substantially identical homes, located “side-by-side” and receiving identical governmental services, could be assessed and taxed at different levels depending upon their date of acquisition. Such a disparity in tax treatment, petitioners claim, constitutes an arbitrary discrimination in violation of the federal equal protection clause ([Amend. XIV, § 1](#)).

Preliminarily, we note that petitioners' equal protection challenge, arguably, is premature. (13) As a general rule, courts will not reach constitutional questions “unless absolutely necessary to a disposition” of the case before them (*Bayside Timber Co. v. Board of Supervisors* (1971) 20 Cal.App.3d 1, 5-6 [97 Cal.Rptr. 431]), and we could decline to consider the issue in the abstract and instead await its resolution within the framework of an actual controversy wherein the disparity is pivotal.

(12b) Nevertheless, we have elected to treat the equal protection issue as constituting an attack upon the face of the article itself, because the assessors throughout this state must be advised whether to follow the new assessment procedure. As will appear, we will conclude that the essential demands of equal protection are satisfied by a rational basis underlying [section 2](#) of the new article.

(14a) The general principles applicable to the determination of an equal protection challenge to state tax legislation were recently summarized by the United States Supreme Court as follows: “We have long held that ‘[w]here taxation is concerned and no specific federal right, apart from equal protection, is imperiled, the States have large leeway in *234 making classifications and drawing lines which in their judgment produce reasonable systems of taxation.’ [Citation.] (15a) A state tax law is not arbitrary although it ‘discriminate[s] in favor of a certain class ... if the discrimination is founded upon a reasonable distinction, or difference in state policy,’ not in conflict with the Federal Constitution. [Citation.] This principle has weathered nearly a century of Supreme Court adjudication” (*Kahn v. Shevin*

(1974) 416 U.S. 351, 355-356 [40 L.Ed.2d 189, 193, 94 S.Ct. 1734.]

(14b) Consistent with the foregoing expression of broad liberality, the high court has recognized the wide flexibility permitted states in the enforcement and interpretation of their tax laws, holding that “The latitude of discretion is notably wide in the classification of property for purposes of taxation and the granting of partial or total exemptions upon grounds of policy.” (*Royster Guano Co. v. Virginia* (1920) 253 U.S. 412, 415 [64 L.Ed. 989, 991, 40 S.Ct. 560], italics added; see *Haman v. County of Humboldt* (1973) 8 Cal.3d 922, 925-927 [106 Cal.Rptr. 617, 506 P.2d 993].) There exists no “iron rule of equality, prohibiting the flexibility and variety that are appropriate” to schemes of taxation. (*Allied Stores of Ohio v. Bowers* (1959) 358 U.S. 522, 526 [3 L.Ed.2d 480, 484, 79 S.Ct. 437]; see *Tax Commissioners v. Jackson* (1931) 283 U.S. 527, 537 [75 L.Ed. 1248, 1255-1256, 51 S.Ct. 540, 73 A.L.R. 1464]; *Ohio Oil Co. v. Conway* (1930) 281 U.S. 146, 159 [74 L.Ed. 775, 781-782, 50 S.Ct. 310].) (15b) So long as a system of taxation is supported by a rational basis, and is not palpably arbitrary, it will be upheld despite the absence of “a precise, scientific uniformity” of taxation. (*Kahn v. Shevin, supra*, 416 U.S. at p. 356, fn. 10 [40 L.Ed.2d at pp. 193-194]; *Allied Stores of Ohio, supra*, at p. 527 [3 L.Ed.2d at p. 485]; *Ohio Oil Co., supra*, at pp. 159-160 [74 L.Ed. at pp. 781-783]; see *Franklin Life Ins. Co. v. State Board of Equalization* (1965) 63 Cal.2d 222, 232-233 [45 Cal.Rptr. 869, 404 P.2d 477].)

(12c) Petitioners, in response, rely upon a line of cases which hold, as a general proposition, that the intentional, systematic undervaluation of property similarly situated with other property assessed at its full value constitutes an improper discrimination in violation of equal protection principles. (E.g., *Cumberland Coal Co. v. Board* (1931) 284 U.S. 23, 28 [76 L.Ed. 146, 149-150, 52 S.Ct. 48]; *Sioux City Bridge v. Dakota County* (1923) 260 U.S. 441, 445 [67 L.Ed. 340, 342-343, 43 S.Ct. 190, 28 A.L.R. 979]; see *Hillsborough v. Cromwell* (1946) 326 U.S. 620, 623 [90 L.Ed. 358, 363, 66 S.Ct. 445] [equal protection forbids imposing taxes not levied against persons of the same class].) *235

The foregoing cases, however, involved constitutional or statutory provisions which mandated the taxation of property on a current value basis. These cases do not purport to confine the states to a current value system under equal protection principles or to state an exception to the general rule accepted both by the United States Supreme Court and by us, as previously noted, that a tax classification or disparity of tax

treatment will be sustained so long as it is founded upon some reasonable distinction or rational basis.

By reason of section 2, subdivision (a), of the article, except for property acquired prior to 1975, henceforth all real property will be assessed and taxed at its value at date of acquisition rather than at current value (subject, of course, to the 2 percent maximum annual inflationary increase provided for in subdivision (b)). This “acquisition value” approach to taxation finds reasonable support in a theory that the annual taxes which a property owner must pay should bear some rational relationship to the original cost of the property, rather than relate to an unforeseen, perhaps unduly inflated, current value. Not only does an acquisition value system enable each property owner to estimate with some assurance his future tax liability, but also the system may operate on a fairer basis than a current value approach. For example, a taxpayer who acquired his property for \$40,000 in 1975 henceforth will be assessed and taxed on the basis of that cost (assuming it represented the then fair market value). This result is fair and equitable in that his future taxes may be said reasonably to reflect the price he was originally willing and able to pay for his property, rather than an inflated value fixed, after acquisition, in part on the basis of sales to third parties over which sales he can exercise no control. On the other hand, a person who paid \$80,000 for similar property in 1977 is henceforth assessed and taxed at a higher level which reflects, again, the price he was willing and able to pay for that property. Seen in this light, and contrary to petitioners' assumption, section 2 does not unduly discriminate against persons who acquired their property after 1975, for those persons are assessed and taxed in precisely the same manner as those who purchased in 1975, namely, on an acquisition value basis predicated on the owner's free and voluntary acts of purchase. This is an arguably reasonable basis for assessment. (We leave open for future resolution questions regarding the proper application of art. XIII A to involuntary changes in ownership or new construction.)

In addition, the fact that two taxpayers may pay different taxes on substantially identical property is not wholly novel to our general taxation *236 scheme. For example, the computation of a sales tax on two identical items of personalty may vary substantially, depending upon the exact sales price and the availability of a discount. Article XIII A introduces a roughly comparable tax system with respect to real property, whereby the taxes one pays are closely related to the acquisition value of the property.

In converting from a current value method to an acquisition value system, the framers of [article XIII A](#) chose not to “roll back” assessments any earlier than the 1975-1976 fiscal year. For assessment purposes, persons who acquired property prior to 1975 are deemed to have purchased it during 1975. These persons, however, cannot complain of any unfair tax treatment in view of the substantial tax advantage they will reap from a return of their assessments from current to 1975-1976 valuation levels. Indeed, the adoption of a uniform acquisition value system without some “cut off” date reasonably might have been considered both administratively unfeasible and incapable of producing adequate tax revenues. The selection of the 1975-1976 fiscal year as a base year, although seemingly arbitrary, may be considered as comparable to utilization of a “grandfather” clause wherein a particular year is chosen as the effective date of new legislation, in order to prevent inequitable results or to promote some other legitimate purpose. (See [Harris v. Alcoholic Bev. etc. Appeals Bd.](#) (1964) 61 Cal.2d 305, 309-310 [38 Cal.Rptr. 409, 392 P.2d 1].) Similar provisions are routinely upheld by the courts. (See, e.g., [New Orleans v. Dukes](#) (1976) 427 U.S. 297, 305-306 [49 L.Ed.2d 511, 517-519, 96 S.Ct. 2513]; [In re Norwalk Call](#) (1964) 62 Cal.2d 185, 188 [41 Cal.Rptr. 666, 397 P.2d 426].)

Petitioners insist, however, that property of equal *current* value must be taxed equally, regardless of its original cost. This proposition is demonstrably without legal merit, for our state Constitution itself expressly contemplates the use of “a value standard other than fair market value” (Art. XIII, § 1, subd. (a).) Moreover, the Legislature is empowered to grant total or partial exemptions from property taxation on behalf of various classes (e.g., veterans, blind or disabled persons, religious, hospital or charitable property; see art. XIII, § 4), despite the fact that similarly situated property may be taxed at its full value. In addition, homeowners receive a partial exemption from taxation (art. XIII, § 3, subd. (k)) which is unavailable to other property owners. As noted previously, the state has wide discretion to grant such exemptions. ([Royster Guano Co. v. Virginia](#), *supra*, 253 U.S. 412, 415 [64 L.Ed. 989, 991].) *237

Finally, no compelling reason exists for assuming that property lawfully may be taxed only at current values, rather than at some other value, or upon some different basis. (16) As the United States Supreme Court has explained, “The State is not limited to *ad valorem* taxation. It may impose different specific taxes upon different trades and professions and may vary the rate of excise upon various products. In levying such

taxes, the State is not required to resort to close distinctions or to maintain a precise, scientific uniformity with reference to composition, use or value.” ([Ohio Oil Co. v. Conway](#), *supra*, 281 U.S. 146, 159 [74 L.Ed. 775, 782].) (12d) We cannot say that the acquisition value approach incorporated in [article XIII A](#), by which a property owner's tax liability bears a reasonable relation to his costs of acquisition, is wholly arbitrary or irrational. Accordingly, the measure under scrutiny herein meets the demands of equal protection principles.

b.) *Two-thirds Voting Requirement.* (17) Petitioners have also questioned whether the requirement of a two-thirds vote to approve “special” local taxes (§ 4) denies to voters the equal protection of the laws. We may quickly dispose of the contention. Petitioners rely upon our decision in [Westbrook v. Mihaly](#), *supra*, 2 Cal.3d 765, wherein we held that a two-thirds requirement for approval of county general obligation bonds violated federal equal protection principles. However, our *Westbrook* opinion was vacated by the United States Supreme Court ([Mihaly v. Westbrook](#) (1971) 403 U.S. 915 [29 L.Ed.2d 692, 91 S.Ct. 2224]) and the cause was remanded for our reconsideration in the light of [Gordon v. Lance](#) (1971) 403 U.S. 1 [29 L.Ed.2d 273, 91 S.Ct. 1889], a case which upheld a 60 percent vote requirement primarily because no “discrete and insular minority” was singled out for special treatment by application of the voting requirement. Thus, *Westbrook* no longer represents the controlling law on the subject. (See [Coffineau v. Eu](#) (1977) 68 Cal.App.3d 138, 143 [137 Cal.Rptr. 90].) Because persons who vote in favor of tax measures may not be deemed to represent a definite, identifiable class, equal protection principles do not forbid “debasing” their vote by requiring a two-thirds approval of such measures.

4. Right to Travel

(18a) Petitioners insist that the constitutional right to travel (see [Associated Home Builders etc., Inc. v. City of Livermore](#), *supra*, 18 Cal.3d 582, 602) is impaired by the provisions of [article XIII A](#). They reason that since any “nonresidents or newly arrived residents” will have to pay greater property taxes than “established” residents [article XIII A](#) will *238 deter property owners from moving to another location, thereby inhibiting travel.

As we have explained in discussing petitioners' equal protection challenge, no penalty is imposed on the owner. (19) The change from a current value system to an acquisition value method is intended to benefit *all* property owners, past and future, resident and nonresident, by reducing inflationary increases in assessments, by limiting tax rates, and by

permitting the taxpayer to make more careful and accurate predictions of future tax liability. (18b) Under the former system, it was arguable that prospective purchasers of real property might have been deterred from purchasing (thereby impairing their right to travel) by reason of the unpredictable nature of future property tax liability resulting from unlimited inflationary pressures. Certainly, travel is inhibited to no greater extent by the new system, which establishes a more fixed and stable measure than that imposed by the former system of unconstrained property taxation based on current values. Accordingly, we hold that the right to travel is not unconstitutionally impaired by [article XIII A](#).

5. Impairment of Contracts

(20) Petitioners forcefully argue that the operation of [article XIII A](#) inevitably will result in the default of various contractual obligations which were incurred by local agencies and districts prior to the enactment of the new article. At the least, petitioners contend, the new restrictions upon the local tax power will “depreciate” the security on which the various obligees have relied for repayment of public obligations held by them. It is claimed, therefore, that [article XIII A](#) constitutes an unlawful impairment of contract under the [federal Constitution \(art. I, § 10, cl. 1\)](#).

Petitioners observe that section 1, subdivision (b), of [article XIII A](#), in apparent anticipation of the argument, contains a specific exception in favor of those holding evidence of certain prior indebtedness: “The limitation provided for in subdivision (a) [the 1 percent maximum tax] shall not apply to ad valorem taxes or special assessments to pay the interest and redemption charges *on any indebtedness approved by the voters* prior to the time this section becomes effective.” (Italics added.) Petitioners point, however, to certain municipal obligations which were not required to be approved by the voters, including pension and health plan benefits, labor and other municipal contracts, and redevelopment agency bonds. The latter category, particularly, involves a special risk of *239 impairment, according to petitioners, for redevelopment agencies rely exclusively upon property tax revenues for the retirement of their bonds.

Redevelopment bonds are secured by a pledge of so-called “tax increment” revenues generated by increases in the assessed value of the redeveloped property. ([Cal. Const., art. XVI, § 16](#); [Health & Saf. Code, §§ 33670, 33671](#); see [Redevelopment Agency v. County of San Bernardino \(1978\)](#) 21 Cal.3d 255, 257-259 [145 Cal.Rptr. 886, 578 P.2d 133].)

As we explained in *San Bernardino*, “In essence this section [[art. XVI, § 16](#)] provides that if, after a redevelopment project has been approved, the assessed valuation of taxable property in the project increases, the taxes levied on such property in the project area are divided between the taxing agency and the redevelopment agency. The taxing agency receives the same amount of money it would have realized under the assessed valuation existing at the time the project was approved, while the additional money resulting from the rise in assessed valuation is placed in a special fund for repayment of indebtedness incurred in financing the project.” (*Id.*, at p. 259, italics omitted.)

According to petitioners, [article XIII A](#) will have a dual adverse effect upon redevelopment agency revenues because both the 1 percent maximum tax and the “rollback” of assessments to a 1975-1976 valuation will combine to reduce substantially tax increment revenues. It is further contended that the problem thereby posed is acute, and the implications widespread. Tax increment bonds are being used to finance 250 redevelopment projects in 121 cities and 3 counties. None of these bonds was specifically approved by the voters, and thus none of them is exempt from the 1 percent maximum tax restriction.

There are two troublesome aspects to petitioners' impairment argument, involving both timing and standing. First, it is readily apparent that petitioners' impairment of contracts argument is prematurely raised. Nothing on the face of [article XIII A](#) requires local agencies to default either in meeting their preexisting contracts or in liquidating their outstanding bonds. As we have seen, the ultimate operation of the article may result in a substantial reduction in the amount of available revenues, but as yet no direct impairment of any contract or bond has occurred by virtue thereof. No party to any contract or bondholder has so contended. As we have noted above, courts will avoid reaching constitutional objections when it is not absolutely necessary to the disposition of the *240 case before them. ([Bayside Timber Co. v. Board of Supervisors, supra, 20 Cal.App.3d 1, 6.](#))

In the present cases, despite the reduction of revenues from property taxation, doubtless many local public entities will retain sufficient funds to meet preexisting contractual or bonded indebtedness rather than suffer default; allocation of surplus state funds (see Stats. 1978, chs. 292, 332) may assist other entities in these efforts.

As for redevelopment agencies, and other local agencies and districts relying upon property tax revenue for the retirement of bonds and other prior indebtedness which have not been voter approved, we note that the Legislature has created the Local Agency Indebtedness Fund to promote a public policy of protecting “the credit of the state and local agencies by assuring that no bond of a local agency goes into default.” (Gov. Code, § 16496, added by Stats. 1978, ch. 292, § 18, italics added.) The new fund is designed to provide loans with a maximum three-year term for the purpose of preventing defaults on bonds during the 1978-1979 fiscal year “while local agencies are reorganizing revenue sources which support payments on such bonds.” (*Id.*, § 16496.5.) This legislation applies to bonds “which have not been specifically approved and authorized by the voters of the local agency prior to June 6, 1978” (*id.*, § 16497, subd. (c)), including redevelopment bonds secured by tax increment revenues (*id.*, § 16499, subd. (b), as amended by Stats. 1978, ch. 332, § 22). The legislation thus fills the gap not covered by the constitutional exemption.

Petitioners properly observe that the new legislation does not specify from what sources a state loan to a redevelopment agency might be repaid (as tax increment revenues presumably are reserved to the bondholders). Yet, as we have previously noted, the loans are made to prevent bond defaults while new revenue sources are being explored. We cannot assume on the face of the present record that no new revenue sources will be found or legislatively created. Thus, for all of the foregoing reasons, we are not able to conclude that default of prior contractual obligations is an *inevitable* consequence of [article XIII A](#).

Petitioners extend their impairment argument, however, contending that the new restrictions upon the local taxing power necessarily have resulted in a present “depreciation” of the security relied upon by the various obligees for repayment of their obligations, and that accordingly the impairment issue is ripe for our consideration. According to *241 petitioners, any substantial restriction placed upon the taxing power of local governments accomplishes an immediate unlawful impairment of preexisting obligations, at least insofar as the discharge of these obligations may depend upon the availability of adequate tax revenues.

The authorities on which petitioners rely for the foregoing proposition are not in point. There is a line of cases holding generally that “a State may not authorize a municipality to borrow money and then restrict its taxing power so that the

debt cannot be repaid. [Citations.]” (*United States Trust Co. v. New Jersey* (1977) 431 U.S. 1, 24, fn. 22 [52 L.Ed.2d 92, 111, 97 S.Ct. 1505], and cases cited, italics added.) These cases do not suggest, however, that an unlawful impairment occurs immediately upon imposition of the tax restriction, without regard to its ultimate effect upon the repayment of preexisting debts. The *United States Trust Co.* decision, on which petitioners primarily rely, involved a legislative repeal of an *express covenant* which had assured to bondholders that monies pledged as security for repayment would not be used to subsidize rail passenger transportation. The high court explained that “The parties [to a municipal contract] may rely on the continued existence of adequate statutory remedies for enforcing their agreement, *but they are unlikely to expect that state law will remain entirely static.* Thus, a reasonable modification of statutes governing contract remedies is much less likely to upset expectations than a law *adjusting the express terms of an agreement.* In this respect, the repeal of the 1962 covenant is seen as a serious disruption of the bondholders' expectations.” (*Id.*, at pp. 20-21, fn. 17 [52 L.Ed.2d at p. 108], italics added.)

Nor does the recent case of *Allied Structural Steel Co. v. Spannaus* (1978) 438 U.S. 234 [57 L.Ed.2d 727, 98 S.Ct. 2716] assist petitioners, for in that case the challenged statute expressly modified the employees' pension rights which previously had been fixed by contract. In the present case, [article XIII A](#) on its face neither directly repudiates any express covenant with municipal obligees nor immediately impairs any contract right. As described by the high court in *Allied*, the federal contract clause (art. I, § 10) applies only to a “substantial impairment of a contractual relationship.” (*Id.*, at p. 244 [57 L.Ed.2d at p. 736].) In the absence of a factual record disclosing any present, specific and substantial impairment of contract attributable to the adoption of [article XIII A](#), we must reject petitioners' impairment of contract challenge because it is premature. *242

A second defect in the impairment argument relates to petitioners' standing to assert the claim. It is noteworthy that, unlike the situation presented in the *United States Trust Co.* and *Allied* cases, none of the petitioners herein are municipal obligees, bondholders or creditors alleging an actual or potential impairment of their rights. In this connection, it is doubtful that petitioners possess the requisite standing to assert the invalidity of [article XIII A](#) on impairment of contract grounds. (See, e.g., *Brock v. Superior Court* (1939) 12 Cal.2d 605, 613-614 [86 P.2d 805]; *In re Davis* (1966) 242 Cal.App.2d 645, 666 [51 Cal.Rptr. 702]; 5 Witkin, Summary

of Cal. Law (8th ed. 1974) *Constitutional Law*, § 44 et seq.) As expressed in an earlier case, "... no obligation of any contract with the appellant has been impaired, and in the absence of a showing of injury on its part, it may not be heard." (*Irrigation District v. Wutchumna W. Co.* (1931) 111 Cal.App. 688, 696 [296 P. 933].)

We conclude that the challenge to [article XIII A](#) based upon the federal contract clause is premature and must await a case in which the contract rights of an obligee have been demonstrably impaired by the operation of the new article.

6. Initiative Title and Summary

(21a) According to petitioners, the preelection petitions which were circulated to qualify the initiative measure contained a misleading title and summary. The *title*, "Initiative Constitutional Amendment-Property Tax Limitation," was assertedly defective in its implication that only *property* taxes would be affected by the measure; in fact, other forms of state and local taxes were also involved. ([Art. XIII A, §§ 3, 4.](#)) Further, the *summary* of the measure stated in part that it "[a]uthorizes specified local entities to impose special taxes except ... [real property taxes]." In fact, [section 4](#) of the measure *restricts* the imposition of such "special taxes" by imposing a two-thirds vote requirement. It is argued that each of these variances is fatal to the constitutional validity of the article.

Petitioners further observe that the sample ballots distributed in Alameda and San Diego Counties also contained the foregoing "defects." As for other counties, the ballot materials were corrected by court order: The title was changed to "Tax Limitation—Initiative Constitutional Amendment," and the summary was revised to read "[a]uthorizes imposition of special taxes by local government (except on real property) by 2/3 vote of qualified electors." According to respondents, these *243 corrections were incorporated into the voters pamphlet subsequently mailed to *all* registered voters. Nevertheless, petitioners insist that the petition signers, and certain voters in Alameda and San Diego Counties, may have been misled or confused by the incorrect title and summary.

(22) Prior to the circulation of an initiative measure, the Attorney General is required to prepare a title and summary of its "chief purposes and points"—not exceeding 100 words. ([Cal. Const., art. II, § 10](#), subd. (d); [Elec. Code, §§ 3502, 3503.](#)) The Attorney General's statement must be true and impartial, and not argumentative or likely to create prejudice for or against the measure. ([Elec. Code, § 3531.](#)) The main

purpose of these requirements is to avoid misleading the public with inaccurate information. (See [Clark v. Jordan](#) (1936) 7 Cal.2d 248, 249-250 [60 P.2d 457, 106 A.L.R. 549]; [Boyd v. Jordan](#) (1934) 1 Cal.2d 468, 471 [35 P.2d 533].) (23) We have said, however, that the title and summary need not contain a complete catalogue or index of all of the measure's provisions and "if reasonable minds may differ as to the sufficiency of the title, the title should be held sufficient." ([Epperson v. Jordan](#) (1938) 12 Cal.2d 61, 66 [82 P.2d 445].) As a general rule, the title and summary prepared by the Attorney General are presumed accurate, and substantial compliance with the "chief purpose and points" provision is sufficient. (*Perry v. Jordan, supra*, Cal.2d 87, 94.)

(21b) In the present case, we conclude that the title and summary, though technically imprecise, substantially complied with the law, and we doubt that any significant number of petition signers or voters were misled thereby. We deem that the title, stressing only the property tax aspects of the initiative, was reasonably sufficient in light of the fact that the measure was principally addressed to the subject of real property tax relief. Similarly, the original summary was not so incomplete as to be fatally defective, because it alerted petition signers and voters alike to the fact that the measure contained a provision affecting the imposition of special taxes by local agencies. The summary's omission of any reference to the two-thirds vote requirement was not critical for, as we noted above, the initiative measure was extensively publicized and debated, in all of its several aspects, and a corrected summary was contained in the voters pamphlet which was mailed to all voters. We repeat our observation of some time ago that we ordinarily should assume that the voters who approved a constitutional amendment "... have voted intelligently upon an amendment to their organic law, the whole text of which was supplied each of them prior to the election and which they must be assumed to *244 have duly considered" ([Wright v. Jordan](#) (1923) 192 Cal. 704, 713 [221 P. 915].)

We conclude that the initiative title and summary comply with existing legal requirements.

7. Vagueness

(24a) Petitioners have noted the existence of several words and phrases in [article XIII A](#) which assertedly are ambiguous or uncertain, suggesting that in its totality the new article is so vague as to be incapable of a rational and uniform interpretation and implementation. For precedential authority

they rely by analogy on cases which have held that a statute must be sufficiently clear so as to provide adequate notice of prohibited conduct. (See, e.g., *People v. Superior Court (Hartway)* (1977) 19 Cal.3d 338, 345-347 [138 Cal.Rptr. 66, 562 P.2d 1315]; *Bowland v. Municipal Court* (1976) 18 Cal.3d 479, 491-493 [134 Cal.Rptr. 630, 556 P.2d 1081]; *Morrison v. State Board of Education* (1969) 1 Cal.3d 214, 231 [82 Cal.Rptr. 175, 461 P.2d 375]; see also *Perez v. Sharp* (1948) 32 Cal.2d 711, 728 [198 P.2d 17].)

In the present matter, unlike the foregoing cases, no civil or criminal penalties are at issue. Rather, we deal with a constitutional provision of a kind, similar to many others, which necessarily and over a period of time will require judicial, legislative and administrative construction. This is a fairly common procedure. (As an example, we note the broad and uncertain language of the various sections of art. I of the state Constitution, declaring the rights of the people, such as the right to be secure against “unreasonable seizures and searches” (§ 13).)

(25) In evaluating the contention that, in effect, [article XIII A](#) is void for vagueness, we are aided by several principles of construction applicable to constitutions generally. As was stated in an early case, “... since a written constitution is intended as and is the mere framework according to whose general outlines specific legislation must be framed and modeled, and is therefore ... necessarily couched in general terms or language, it is not to be interpreted according to narrow or supertechnical principles, but liberally and on broad general lines, so that it may accomplish in full measure the objects of its establishment and so *245 carry out the great principles of government.” (*Stephens v. Chambers* (1917) 34 Cal.App. 660, 663-664 [168 P. 595].)

(26) On the specific issue of vagueness, we have recently expressed the concept that, in the abstract, all “enactments should be interpreted when possible to uphold their validity [citation] and ... courts should construe enactments to give specific content to terms that might otherwise be unconstitutionally vague. [Citations.]” (*Associated Home Builders etc., Inc. v. City of Livermore, supra*, 18 Cal.3d 582, 598.) Significantly, in *Livermore*, the foregoing principles were employed to uphold an ordinance adopted *by initiative*.

(24b) Acknowledging as we must that [article XIII A](#) in a number of particulars is imprecise and ambiguous, nonetheless we do not conclude that it is so vague as to be unenforceable. Rather, in the usual manner, the various

uncertainties and ambiguities may be clarified or resolved in accordance with several other generally accepted rules of construction used in interpreting similar enactments. Thus, California courts have held that constitutional and other enactments must receive a liberal, practical common-sense construction which will meet changed conditions and the growing needs of the people. (*Los Angeles Met. Transit Authority v. Public Util. Com.* (1963) 59 Cal.2d 863, 869 [31 Cal.Rptr. 463, 382 P.2d 583]; see *People v. Davis* (1968) 68 Cal.2d 481, 483 [67 Cal.Rptr. 547, 439 P.2d 651]; *Rose v. State of California* (1942) 19 Cal.2d 713, 723 [123 P.2d 505].) (27) A constitutional amendment should be construed in accordance with the natural and ordinary meaning of its words. (*In re Quinn* (1973) 35 Cal.App.3d 473, 482 [110 Cal.Rptr. 881].) The literal language of enactments may be disregarded to avoid absurd results and to fulfill the apparent intent of the framers. (See *Friends of Mammoth v. Board of Supervisors* (1972) 8 Cal.3d 247, 259 [104 Cal.Rptr. 761, 502 P.2d 1049]; *In re Kernan* (1966) 242 Cal.App.2d 488, 491 [51 Cal.Rptr. 515].)

(28) Most importantly, apparent ambiguities frequently may be resolved by the contemporaneous construction of the Legislature or of the administrative agencies charged with implementing the new enactment. (See *State of South Dakota v. Brown* (1978) 20 Cal.3d 765, 777 [144 Cal.Rptr. 758, 576 P.2d 473]; *Associated Home Builders etc., Inc. v. City of Livermore, supra*, 18 Cal.3d at p. 598; *Reynolds v. State Board of Equalization* (1946) 29 Cal.2d 137, 140 [173 P.2d 551, 174 P.2d 4].) In addition, when, as here, the enactment follows voter approval, the ballot *246 summary and arguments and analysis presented to the electorate in connection with a particular measure may be helpful in determining the probable meaning of uncertain language. (See *Carter v. Seaboard Finance Co.* (1949) 33 Cal.2d 564, 580-581 [203 P.2d 758]; *People v. Ottey* (1936) 5 Cal.2d 714, 723 [56 P.2d 193]; *In re Quinn, supra*, 35 Cal.App.3d 473, 483.)

(24c) In the instant matter we have the advantage of both principal interpretive aids, those related to the ballot and the legislative-administrative construction. We focus primarily on the latter. The Legislature has already proceeded to implement [article XIII A](#) by enacting extensive legislation. (Stats. 1978, chs. 292, 332.) Administratively, the State Board of Equalization has adopted extensive regulations construing various provisions of the new article. (Cal. Admin. Code, tit. 18, regs. 460-471.) These legislative and administrative implementations are traditionally accorded great weight by

the courts in construing enactments such as [article XIII A](#). (*State of South Dakota v. Brown, supra*, at p. 777.)

We do not discuss each of [article XIII A](#)'s numerous uncertainties claimed by petitioners, satisfied that the new legislation and administrative regulations adopted following popular approval of [article XIII A](#) disclose that relatively few such uncertainties remain. We do not, of course, thereby suggest that these implementing provisions necessarily constitute, in all instances, correct interpretations of the terms of [article XIII A](#). Nonetheless, these interpretations, a few of which are illustrative, will materially assist both the state and the various local agencies in placing the new taxation scheme into operation in a reasonably workable fashion.

First, and most importantly, the Legislature has read the language of section 1, subdivision (a), (“The one percent (1%) tax to be collected by the counties and apportioned *according to law* to the districts within the counties”) as conferring authority to legislate on the subject and to apportion the tax funds to the local agencies and districts. The new legislation sets forth the applicable allocation formulae ([Gov. Code, § 26912](#)) and also gives guidance on the following matters, among many, which petitioners had found unclear from the face of [article XIII A](#): (1) The new 1 percent maximum tax is to be levied by the counties on behalf of all local agencies and districts ([Rev. & Tax. Code, § 2235](#)); (2) the cities and counties are deemed “districts” under section 1 of the new article and thus share in the tax proceeds (**247 Gov. Code, § 26912; Rev. & Tax. Code, § 2217*); (3) the 1 percent tax is a limit on the total, aggregate amount to be levied and apportioned by all local agencies and districts ([Rev. & Tax. Code, § 2235](#), subd. (b)); (4) districts which encompass more than a single county will receive a share of the tax proceeds ([Gov. Code, § 26912](#), subd. (d)), and (5) the exemption for prior, voter-approved indebtedness ([art. XIII A, § 1](#), subd. (b)) includes amounts necessary to meet annual payments on the principal as well as the interest on such indebtedness ([Gov. Code, § 26912](#), subd. (b)(3); [Rev. & Tax. Code, § 2235](#), subd. (a)).

In addition, the new legislation construes or defines several of the undefined terms used in [article XIII A](#), such as “full cash value” and “fair market value” ([Rev. & Tax. Code, §§ 110, 110.1](#)) and “change in ownership” (*id.*, § 110.6). Further, the State Board of Equalization has adopted regulations covering these and other subjects. (See Cal. Admin. Code, tit. 18, ch. 1, subch. 4, regs. 460 [“full cash value” and “fair market value”], 462 [“change in ownership”], 463 [“newly

constructed” property], and 464 [application of homeowners’ and veterans’ exemptions].)

In short, the foregoing implementing provisions doubtless have not resolved each and every uncertainty described by petitioners. Furthermore, these provisions remain subject to judicial challenge in subsequent cases on the basis that they may incorrectly manifest the intent of [article XIII A](#). Nonetheless, it seems undeniable that good faith efforts have been made, and are presently being made, to carry into practical effect the collective will of a very substantial majority of our citizens, as reflected in the adoption of that article on June 6 of this year. Our analysis convinces us that [article XIII A](#) is not so vague and uncertain in its essential terms as to render it void and inoperable.

As noted above, we decline to reach the question whether the various interpretations put forth by the Legislature and State Board of Equalization are correct. In a somewhat similar connection we recently affirmed that “it seems apparent that we cannot, and should not, attempt to pass upon the meaning or validity of each contested provision in every hypothetical context—adjudication of these matters must await an actual controversy, and should proceed on a case-by-case basis as the need arises.” (*County of Nevada v. McMillen, supra*, 11 Cal.3d 662, 674.) **248* Many, perhaps most, of the uncertainties carefully noted by petitioners may disappear if a reasonable, common sense approach is used in the interpretation of [article XIII A](#), and if appropriate weight is given to the contemporaneous construction of the legislative and administrative bodies charged with its enforcement in accordance with well established legal precedent.

Conclusion

Petitioners and the amici curiae who support them have mounted substantial and serious legal challenges to the provisions of [article XIII A](#). In doing so they have expressed a commendable and sincere concern that the modifications of the California tax system which are mandated by the new article will impose intolerable financial hardships and administrative burdens in different forms and with varying intensity on public entities, programs, and services throughout California. Yet, as we have recently acknowledged, it is our solemn duty “to jealously guard” the initiative power, it being “one of the most precious rights of our democratic process.” (*Associated Home Builders etc., Inc. v. City of Livermore, supra*, 18 Cal.3d 582, 591, quoting from earlier cases.) Consistent with our own precedent, in our approach to the constitutional analysis of [article XIII A](#)

if doubts reasonably can be resolved in favor of the use of the initiative, we should so resolve them. (*Ibid.*) This we have done.

Having carefully considered them, we have concluded that [article XIII A](#) survives each of the substantial challenges raised by petitioners. The orders to show cause previously issued in these cases are discharged, and the respective petitions are denied.

Tobriner, J., Mosk, J., Clark, J., Manuel, J., and Newman, J., concurred.

BIRD, C. J.,

Concurring and Dissenting.

Initiatives by their very nature are direct votes of the people and should be given great deference by our courts. Judges should liberally construe this power so that the will of the people is given full weight and authority. However, if an initiative conflicts with the federal Constitution, judges are duty bound to hold the offending sections unconstitutional.

When these principles are applied to the cases before this court, it is clear that [article XIII A](#) is constitutional in all respects save one. I endorse *249 the majority opinion's view that there has not been a violation of the one subject rule, an impermissible revision of the Constitution, or a curtailment of the right to travel. Further, it is correct in holding that the question of impairment of contracts is not properly before this court and is not ripe for decision.

One issue remains which troubles me deeply. As judges we must be devoted to the preservation of the great constitutional principles which history has bequeathed to us. In [article XIII A](#), one of those principles has been violated—the equal protection clause. No one mindful of this nation's colonial history can seriously question the right of the people to act to redress tax grievances. However, our citizens also have a right to be treated equally before the law. The right to equality of taxation is as basic to our democracy as is the right to representation in matters of taxation. Under [article XIII A](#) property taxpayers are not treated equally, and those sections which promote this disparity must fall.

Consider these facts. John and Mary Smith live next door to Tom and Sue Jones. Their houses and lots are identical with current market values of \$80,000. The Smiths bought their home in January of 1975 when the market value was \$40,000. The Joneses bought their home in 1977 when the market value was \$60,000. In 1977, both homes were assessed at \$60,000, and both couples paid the same amount of property tax. However, under [article XIII A](#) in 1978, the Joneses will pay 150 percent of the taxes that the Smiths will pay. Should a third couple buy the Smiths' home in 1978, that couple would pay twice the taxes that the Smiths would have paid for the *same* home had they not sold it. Today, this court holds that such disparity is not only equitable, but that it does not violate the equal protection clause of the Constitution.

The basic problem with this position is that it upholds the adoption of an assessment scheme that systematically assigns different values to property of equal worth. By pegging some assessments to the value of property at its date of purchase and other assessments to the value of property as of March 1, 1975, [article XIII A](#) creates an irrational tax world where people living in homes of identical value pay different property taxes. Thus, instead of establishing an assessment scheme with one basis by which all property owners are taxed, [article XIII A](#) utilizes two bases, *250 acquisition date and 1975 market value, to impose artificial distinctions upon equally situated property owners.

[Article XIII A](#) divides the property tax-paying public into two classes, pre-and post-1975 purchasers. [Section 2\(a\)](#) rewards those owners who purchased their property before March 1, 1975, by constitutionally fixing their tax assessments at lower figures than those who buy property of similar or identical value at a later date. This “roll back” provision confers substantial benefits upon one group of property owners not shared by other similarly situated owners. This provision raises the ugly specter of a race for tax savings in which the players start at different points, weighed down by different “handicaps.”

Inequalities in state taxation have been held to be constitutional so long as they “rest upon some ground of difference having a fair and substantial relation to the object of legislation” (*Royster Guano Co. v. Virginia* (1920) 253 U.S. 412, 415 [64 L.Ed. 989, 990, 40 S.Ct. 560]; see also *Kahn v. Shevin* (1974) 416 U.S. 351, 355-356 [40 L.Ed.2d 189, 193, 94 S.Ct. 1734]; *Allied Stores of Ohio v. Bowers* (1959) 358 U.S. 522, 526-527 [3 L.Ed.2d 480, 484, 79 S.Ct. 437]; *Ohio*

[Oil Co. v. Conway \(1930\) 281 U.S. 146, 159-160 \[74 L.Ed. 775, 781-782, 50 S.Ct. 310\].](#))

However, even minimal scrutiny requires that the statutes of the Legislature and the initiatives of the people be defensible in terms of a shared public good, not merely in terms of the purposes of a special group or class of persons. (See Tribe, *American Constitutional Law* (1978) p. 995.) The law should be something more than just the handmaiden of a special class; it must ultimately be the servant of justice.

Respondents fail to establish the general public benefit to be found in giving some, but not all, individuals a “roll back” to 1975 assessments. To be eligible for the full “roll back,” [article XIII A](#) requires that an individual have owned continuously his or her property since a date prior to March of 1975. This requirement makes it literally impossible for persons purchasing property in 1978 or thereafter to qualify for benefits granted fully to pre-1975 owners (and less fully to 1975-1978 owners). In so doing, [article XIII A](#) transgresses the constitutional guarantee of equal protection under the law.

Respondents defend the rationality of the 1975 date by characterizing it as a cut-off date or “grandfather” clause. Although its arbitrariness is *251 conceded, they argue that it is defensible as a matter of administrative convenience. This contention lacks merit. It merely acknowledges that “it is difficult to be just, and easy to be arbitrary.” ([Stewart Dry Goods Co. v. Lewis \(1935\) 294 U.S. 550, 560 \[79 L.Ed. 1054, 1059, 55 S.Ct. 525\].](#)) Administrative convenience is wholly inadequate to warrant preferred treatment of a closed class of property owners. This court has previously refused to accept administrative convenience as a sufficient explanation of “great” differences in tax rates among similarly situated individuals. ([Haman v. County of Humboldt \(1973\) 8 Cal.3d 922, 927-928 \[106 Cal.Rptr. 617, 506 P.2d 993\]](#); cf. [Toomer v. Witsell \(1948\) 334 U.S. 385, 398-399 \[92 L.Ed. 1460, 1472-1473, 68 S.Ct. 1157\].](#)) In *Haman*, this court rejected the contention that administrative convenience justified a 23 percent spread in the rate at which California-registered and out-of-state registered fishing vessels were taxed. [Article XIII A](#) may in individual cases cause a disparity in taxes which is much greater than 23 percent. This is especially true in those cases where the effect of inflation and appreciation on real property values has been acute.

The fact that the former property tax system allowed inequalities through exemptions for charitable, religious, nonprofit and educational institutions is no answer to

the questions raised by [article XIII A](#). Those exemptions benefitted the general public since the public received specific benefits from the exempted organizations. No one has yet established what benefits the general public derives from the systematic undervaluation of the property of pre-1975 purchasers, and this court should decline to hypothesize rationales. (See Gunther, *The Supreme Court, 1971 Term —Forward: In Search of Evolving Doctrine on a Changing Court: A Model for a Newer Equal Protection (1972) 86 Harv.L.Rev. 1, 33, 44-46, 47.*)

II

The adoption of the acquisition date of property as the standard for valuation raises novel constitutional questions never decided by the Supreme Court. In analyzing [section 2\(a\)](#), this court must decide whether it is constitutionally permissible for a state to systematically assign unequal assessment to properties of concededly equal market value.

The practical effect of [section 2\(a\)](#) is to undervalue property purchased at an earlier date in comparison to the assessments assigned to subsequently purchased property. The extent of undervaluation will fluctuate *252 with the degree of property value appreciation in a particular locality. Given the “roll back” feature, the process inevitably starts by substantially undervaluing prior purchased property.

Once it is understood that [article XIII A](#) systematically imposes different assessments on property of similar worth, a long line of Supreme Court cases becomes relevant. Those cases support the proposition that a person is denied equal protection of the law when his property is assessed at a higher value than property of equal worth in the same locale. “The purpose of the equal protection clause of the Fourteenth Amendment is to secure every person within the State's jurisdiction against intentional and arbitrary discrimination, whether occasioned by express terms of a statute or by its improper execution And it must be regarded as settled that intentional systematic undervaluation by state officials of other taxable property in the same class contravenes the constitutional right of one taxed upon the full value of his property.” ([Sunday Lake Iron Co. v. Wakefield \(1918\) 247 U.S. 350, 352-353 \[62 L.Ed. 1154, 1155-1156, 38 S.Ct. 495\]](#); see also [Raymond v. Chicago Traction Co. \(1907\) 207 U.S. 20, 36-37 \[52 L.Ed. 78, 87-88, 28 S.Ct. 7\]](#); [Sioux City Bridge v. Dakota County \(1923\) 260 U.S. 441, 445 \[67 L.Ed. 340, 342-343, 43 S.Ct. 190, 28 A.L.R. 979\]](#); [Cumberland Coal Co. v. Board \(1931\) 284 U.S. 23, 28-29 \[76 L.Ed. 146, 149-150, 52 S.Ct. 48\].](#))

In *Sioux City Bridge*, *supra*, the Supreme Court held it to be a violation of the equal protection clause to assess one company's property at 100 percent of its market value while other real estate in the same district was generally assessed at only 55 percent of the market value. [Section 2\(a\) of article XIII A](#) authorizes the same kind of discrimination as that condemned in *Sioux City Bridge*. Initially, properties purchased in earlier years will be undervalued in comparison with other properties (though they may be identical in current fair market value) purchased, constructed, or transferred in later years. Then, as the years go by, the skewed nature of the tax world created by [article XIII A](#) will become even more pronounced as each successive generation of purchasers will have their property overvalued in comparison to their neighbors or predecessor owners. For example, consider the condominium complex where each unit, though of identical fair market value, receives a different tax assessment simply because purchased in a different year. Consider the plight of the military family required by circumstances to change residence periodically. In 1979, that family may sell a house purchased in 1975, and buy a new house of identical current cash value. However, their [*253](#) tax bill will take a quantum leap upward, as their assessment jumps from 1975 to 1979 levels. Conversely, the family allowed by circumstances to remain in one house for long periods of time will reap substantial tax benefits simply because of the length of their residency.

Consider further the plight of the family which “newly constructs” their house after a natural disaster such as fire or flood. [Article XIII A, section 2\(a\)](#) penalizes them by reassessing the value of their house to market value at the time of the new construction. What is the possible rationale for allowing natural disasters to trigger an increase in property tax obligations? Surely a truly rational tax world would consider such families for tax relief.¹ Finally, consider the reassessment to current market value mandated by [section 2, subdivision \(a\)](#) for “changes in ownership” brought about by divorce or death. Did those who voted so overwhelmingly for [article XIII A](#)'s general tax relief also intend to penalize those families who experience such family crises?

In *Cumberland Coal Co. v. Board*, *supra*, 284 U.S. 23, the Supreme Court invalidated a taxing measure that ignored differences in current market value. In that case, the local assessors chose to assign the same dollar value per ton to all unmined coal in the county. However, it was undisputed that there existed substantial differences in value between given

tons of coal, depending on the mining and transportation costs. The court saw clearly the gross inequalities that resulted, *even though the same percentage tax was levied on all*: “... the fact that a uniform percentage of assigned values is used, cannot be regarded as important if, in assigning the values to which the percentage is applied, a system is deliberately adopted which ignores differences in actual values so that property in the same class as that of the complaining taxpayer is valued at the same figure (according to the unit of valuation, as, for example, an acre) as the property of other owners which has an actual value admittedly higher. Applying the same ratio to the same assigned values, when the actual values differ, creates the same disparity in effect as applying a different ratio to actual values when the latter are the same.” (*Id.*, at p. 29 [76 L.Ed. at p. 150].)

[Article XIII A](#) adopts an assessment scheme similar in effect to that condemned in *Cumberland Coal*. The same percentage (one percent) is [*254](#) applied to all assessed values; but the assessed values themselves do not accurately reflect the respective market values of property. This has the effect, as the court noted in *Cumberland Coal*, *supra*, 284 U.S. at [page 29 \[76 L.Ed. at p. 150\]](#), of taxing identically situated property owners at different percentages of the true value of their property. If [article XIII A](#) had been drafted to say, “Some persons will pay a property tax of one percent of the true value of their property; others will pay only a one-half of one percent tax,” the violation of the equal protection clause would have been obvious. Yet, the result [article XIII A](#) is the same. Assume, for instance, that the market value of a home increases from \$50,000 in 1975 to \$100,000 some time in the future. A one percent tax on the 1975 is equivalent to a one-half of one percent tax on the new value.

Decisions in this jurisdiction have reiterated the principle that the equal protection clause is violated when one person's property is assessed at a higher level than another person's property which is of identical value. For example, in *Birch v. County of Orange* (1921) 186 Cal. 736, 741 [200 P. 647], this court held that a taxpayer is entitled to “the exercise of good faith and fair consideration on the part of the taxing power in assessing his property, at the same rate and on the same basis of valuation as that applied to other property of like character and similarly situated.”

The Court of Appeal recently restated this principle: “The value of property for assessment purposes is to be determined ... on such basis as is used in regard to other property so as to make all assessments as equal and fair as

is practicable. [Citations.] In order to carry out this principle, the assessor and the county board of equalization must apply the same ratio to market value uniformly within the county.” (*Glidden Company v. County of Alameda* (1970) 5 Cal.App.3d 371, 378 [85 Cal.Rptr. 88, 86 Cal.Rptr. 464]; see also *Simms v. County of Los Angeles* (1950) 35 Cal.2d 303, 315 [217 P.2d 936]; *Mahoney v. City of San Diego* (1926) 198 Cal. 388, 397, 404 [245 P. 189]; *Metropolitan Stevedore Co. v. County of Los Angeles* (1972) 29 Cal.App.3d 565, 572 [105 Cal.Rptr. 595]; *City of Los Angeles v. County of Inyo* (1959) 167 Cal.App.2d 736, 740 [335 P.2d 166]; *Rancho Santa Margarita v. San Diego Co.* (1932) 126 Cal.App. 186, 197 [14 P.2d 588]; *Birch v. County of Orange* (1927) 88 Cal.App. 82, 85 [262 P. 788].) Thus, strong authority exists for the conclusion that the attempt of [article XIII A](#) to assign different assessments to properties of equal market value violates the equal protection clause. *255

Respondents would seek to deny that those who pay more for property are in reality “similarly situated” with those who paid less for property of the same value in earlier years. The premise of this argument is that the later purchaser is better able to afford a high tax since (1) he paid more for his property to begin with and (2) he knew from the beginning he was buying a highly assessed piece of property.

The fact that a purchaser presently pays \$80,000 for a home which someone else bought for \$40,000 in 1975 may tell us nothing more than that inflation has been rampant and property values on the rise. In fact, the higher mortgage payments that new homeowners pay as compared to earlier purchasers forewarns us against any cavalier assumption that later purchasers are able to bear heavier taxes.

[Section 2\(a\)](#) mandates reassessment to current market value not only for voluntary purchasers but any time there is a “change in ownership.” Thus, as previously noted, the person who inherits the family home or the spouse who gains title to property after a divorce may find that the assessment on the property suddenly skyrockets for property tax purposes. There is no rationality to the jump in valuation that accompanies these occurrences. Similarly, those persons who must move often because of the nature of their employment (for example, military families) will find that [section 2\(a\)](#)'s mandated reassessments bear little relation to their financial situation. Even more perplexing is the situation of persons who find that new construction must be done to their property after a natural disaster. [Section 2\(a\)](#) once more requires reassessment to “full cash value.” The arbitrariness

of [article XIII A](#)'s assessment scheme could not be more apparent.

Finally, the arbitrariness of the acquisition date valuation as a tax standard can be demonstrated by considering the plight of the taxpayer whose property has actually *decreased* in value since 1975. Under the previous tax system, such a person's property tax assessment would eventually reflect the decline in market value. However, under [article XIII A](#) the assessment remains fixed at the acquisition date value since [section 2\(b\)](#) allows for a reduction in assessment only on the basis of a downward turn in the consumer price index.

I am aware that during the past 40 years, since the end of the *Lochner* era (see *Lochner v. New York* (1095) 198 U.S. 45 [49 L.Ed. 937, 25 S.Ct. 539]), courts have not used the Fourteenth Amendment “to strike down *256 state laws ... because they may be unwise, improvident, or out of harmony with a particular school of thought.” (*Williamson v. Lee Optical Co.* (1955) 348 U.S. 483, 488 [99 L.Ed. 563, 572, 75 S.Ct. 461].) I fully agree that in regard to matters of economics and tax policy, courts must defer to the will of the people unless the challenged enactment lacks a rational basis. However, the rational basis test was never meant to authorize judicial tolerance of unconstitutional classifications.

Earlier this year, this court reiterated that minimal scrutiny “require[s] the court to conduct “*a serious and genuine judicial inquiry* into the correspondence between the classification and the legislative goals.”” (*Cooper v. Bray* (1978) 21 Cal.3d 841, 848 [148 Cal.Rptr. 148, 582 P.2d 604], quoting *Newland v. Board of Governors* (1977) 19 Cal.3d 705, 711 [139 Cal.Rptr. 620, 566 P.2d 254], italics original in *Cooper v. Bray*, *supra*.) After conducting such a “serious and genuine judicial inquiry,” many courts have found that various classifications could not survive even minimal scrutiny under the equal protection clause. (E.g., *U.S. Dept. of Agriculture v. Moreno* (1973) 413 U.S. 528, 538 [37 L.Ed.2d 782, 790, 93 S.Ct.2821]; *Rinaldi v. Yeager* (1966) 384 U.S. 305, 309-310 [16 L.Ed.2d 577, 580-581, 86 S.Ct. 1497]; *D'Amico v. Board of Medical Examiners* (1974) 11 Cal.3d 1, 22-23 [112 Cal.Rptr. 786, 520 P.2d 10]; *Blumenthal v. Board of Medical Examiners* (1962) 57 Cal.2d 228, 234-235 [18 Cal.Rptr. 501, 368 P.2d 101]; *Miller v. Union Bank & Trust Co.* (1936) 7 Cal.2d 31, 34-36 [59 P.2d 1024].) Some of the classifications which were invalidated related to matters of taxation. (E.g., *WHYY v. Glassboro* (1968) 393 U.S. 117, 120 [21 L.Ed.2d 242, 245, 89 S.Ct. 286]; *City of Los Angeles v. Shell Oil Co.* (1971) 4 Cal.3d 108, 125-126 [93 Cal.Rptr.

[1](#), 480 P.2d 953]; *County of Alameda v. City and County of San Francisco* (1971) 19 Cal.App.3d 750, 756-757 [97 Cal.Rptr. 175, 48 A.L.R.3d 332].) The lines drawn by [section 2\(a\) of article XIII A](#) are similar in effect to the discriminatory categories struck down in those cases. If a serious and genuine judicial inquiry is made of the classifications under [section 2\(a\)](#), it is clear that they violate the equal protection clause of the Constitution by treating identical or similarly situated property taxpayers in an unfair and unequal way.

III

This decision has not been an easy one. The issues are close and reasonable people may differ. Emotions run high on this question, but as judges we must follow the law and do what it requires. As Justice Story *257 wrote in *Trustees of Dartmouth College v. Woodward* (1819) 17 U.S. (4 Wheat.) 250, 338 [4 L.Ed. 629, 713], “It is not for judges to listen to the voice of persuasive eloquence, or popular appeal. We have nothing to do, but to pronounce the law as we find it; and having done this, our justifications must be left to the impartial judgment of our country.”

Article XIII A

“[Section 1](#). (a) The maximum amount of any ad valorem tax on real property shall not exceed one percent (1%) of the full cash value of such property. The one percent (1%) tax to be collected by the counties and apportioned according to law to the districts within the counties.

“(b) The limitation provided for in subdivision (a) shall not apply to ad valorem taxes or special assessments to pay the interest and redemption charges on any indebtedness approved by the voters prior to the time this section becomes effective.

“[Section 2](#). (a) The full cash value means the County Assessors valuation of real property as shown on the 1975-76 tax bill under 'full cash value,' or thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment. All real property not already assessed up to the 1975-76 tax levels may be reassessed to reflect that valuation.

“(b) The fair market value base may reflect from year to year the inflationary rate not to exceed two percent (2%) for any given year or reduction as shown in the consumer price index or comparable data for the area under taxing jurisdiction.

“[Section 3](#). From and after the effective date of this article, any changes in State taxes enacted for the purpose of increasing revenues collected pursuant thereto whether by increased rates or changes in methods of computation must be imposed by an Act passed by not less than two-thirds of all members elected to each of the two houses of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed.

“[Section 4](#). Cities, Counties and special districts, by a two-thirds vote of the qualified electors of such district, may impose special taxes on such district, except ad valorem taxes on real property or a transaction tax or sales tax on the sale of real property within such City, County or special district.

“Section 5. This article shall take effect for the tax year beginning on July 1 following the passage of this Amendment, except [Section 3](#) which shall become effective upon the passage of this article.

“Section 6. If any section, part, clause, or phrase hereof is for any reason held to be invalid or unconstitutional, the remaining sections shall not be affected but will remain in full force and effect.” *258

Footnotes

- 1 It is noteworthy that a proposed constitutional amendment to remedy this anomalous situation has been adopted by the Legislature and awaits a vote of the people. (Sen. Const. Amend. No. 67, Stats. 1978 (1977-1978 Reg. Sess.) res. ch. 76, pp. _____.)

35 Cal.4th 613

Supreme Court of California

CITY OF BURBANK, Plaintiff and Appellant,

v.

STATE WATER RESOURCES CONTROL
BOARD et al., Defendants and Appellants.

City of Los Angeles, Plaintiff and Respondent,

v.

State Water Resources Control Board
et al., Defendants and Appellants.

Nos. S119248, B151175, B152562.

|

April 4, 2005.

|

Rehearing Denied June 29, 2005. *

Synopsis

Background: Cities filed petitions for writs of mandate challenging pollutant limitations in wastewater discharge permits issued by regional water quality control boards. The Superior Court, Los Angeles County, Nos. BS060957 and BS060960, Dzintra I. Janavs, J., set aside permits. Regional board and state water resources control board appealed. The Court of Appeal consolidated the cases and reversed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, [Kennard](#), J., held that:

regional board may not consider economic factors as justification for imposing pollutant restrictions in wastewater discharge permit which are less stringent than applicable federal standards, and

when imposing more stringent pollutant restrictions that those required by federal law, regional board may take economic factors into account.

Judgment of Court of Appeal affirmed, and matter remanded.

Brown, J., filed concurring opinion.

Opinion, [4 Cal.Rptr.3d 27](#), superseded.

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Opinion

[KENNARD](#), J.

618** *864** Federal law establishes national water quality standards but allows the states to enforce their own water quality laws so long as they comply with federal standards. Operating within this federal-state framework, California's nine Regional Water Quality Control Boards establish water quality policy. They also issue permits for the discharge of treated wastewater; these permits specify the maximum allowable concentration of chemical pollutants in the discharged wastewater.

The question here is this: When a regional board issues a permit to a wastewater treatment facility, must the board take into account the facility's costs of complying with the board's restrictions on pollutants in the wastewater to be discharged? The trial court ruled that California law required a regional board to weigh the economic burden on the facility against the expected environmental benefits of reducing pollutants in the wastewater discharge. The Court of Appeal disagreed. On petitions by the municipal operators of three wastewater treatment facilities, we granted review.

We reach the following conclusions: Because both California law and federal law require regional boards to comply with federal clean water standards, and because the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic

factors to justify imposing pollutant restrictions that are *less stringent* than the applicable federal standards require. When, however, a regional board is considering whether to make the pollutant restrictions in a wastewater discharge permit *more stringent* than federal law requires, California law allows the board to take into account economic ****865** factors, including the wastewater discharger's cost of compliance. We remand this case for further proceedings to determine whether the pollutant limitations in the permits challenged here meet or exceed federal standards.

***619 I. STATUTORY BACKGROUND**

The quality of our nation's waters is governed by a “complex statutory and regulatory scheme ... that implicates both federal and state administrative responsibilities.” (*PUD No. 1 of Jefferson County v. Washington Department of Ecology* (1994) 511 U.S. 700, 704, 114 S.Ct. 1900, 128 L.Ed.2d 716.) We first discuss California law, then federal law.

A. California Law

In California, the controlling law is the Porter–Cologne Water Quality Control Act (Porter–Cologne Act), which was enacted in 1969. (*Wat.Code, § 13000 et seq.*, added by Stats.1969, ch. 482, § 18, p. 1051.)¹ Its goal is “to attain the highest water ****307** quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.” (§ 13000.) The task of accomplishing this belongs to the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards; together the State Board and the regional boards comprise “the principal state agencies with primary responsibility for the coordination and control of water quality.” (§ 13001.) As relevant here, one of those regional boards oversees the Los Angeles region (the Los Angeles Regional Board).²

Whereas the State Board establishes statewide policy for water quality control (§ 13140), the regional boards “formulate and adopt water quality control plans for all areas within [a] region” (§ 13240). The regional boards' water quality plans, called “basin plans,” must address the beneficial uses to be protected as well as water quality objectives, and they must establish a program of implementation. (§ 13050, subd. (j).) Basin plans must be consistent with “state policy for water quality control.” (§ 13240.)

B. Federal Law

In 1972, Congress enacted amendments ([Pub.L. No. 92–500](#) (Oct. 18, 1972) 86 Stat. 816) to the Federal Water Pollution Control Act ([33 U.S.C. § 1251 et seq.](#)), which, as amended in 1977, is commonly known as the Clean *620 Water Act. The Clean Water Act is a “comprehensive water quality statute designed ‘to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.’ ” ([PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, supra, 511 U.S. at p. 704, 114 S.Ct. 1900](#), quoting [33 U.S.C. § 1251\(a\).](#)) The Act's national goal was to eliminate by the year 1985 “the discharge of pollutants into the navigable waters” of the United States. ([33 U.S.C. § 1251\(a\)\(1\).](#)) To accomplish this goal, the Act established “effluent limitations,” which are restrictions on the “quantities, rates, and concentrations of chemical, physical, biological, and other constituents”; these effluent limitations allow the discharge of pollutants only when the water has been satisfactorily treated to conform with federal water quality standards. ([33 U.S.C. §§ 1311, 1362\(11\).](#))

Under the federal Clean Water Act, each state is free to enforce its own water quality laws so long as its effluent limitations are not “less stringent” than those set out in the Clean Water Act. ([33 U.S.C. § 1370.](#)) This led the California Legislature in 1972 to amend the state's Porter–Cologne Act “to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act.” (§ 13372.)

866 Roughly a dozen years ago, the United States Supreme Court, in [Arkansas v. Oklahoma \(1992\) 503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239](#), described the distinct roles of the state and federal agencies in enforcing water quality: “The Clean Water Act anticipates a partnership between the States and the Federal Government, animated by a shared objective: ‘to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.’ [33 U.S.C. § 1251\(a\).](#) Toward *308 this end, [the Clean Water Act] provides for two sets of water quality measures. ‘Effluent limitations’ are promulgated by the [Environmental Protection Agency (EPA)] and restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources.³ See [§§ 1311, 1314](#). ‘[W]ater quality standards’ are, in general, promulgated by the States and establish the desired condition of a waterway. See § 1313. These standards supplement effluent

limitations ‘so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.’ [EPA v. California ex rel. State Water Resources Control Bd., 426 U.S. 200, 205, n. 12, 96 S.Ct. 2022, 2025, n. 12, 48 L.Ed.2d 578 \(1976\).](#)

*621 “The EPA provides States with substantial guidance in the drafting of water quality standards. See generally 40 CFR pt. 131 (1991) (setting forth model water quality standards). Moreover, [the Clean Water Act] requires, *inter alia*, that state authorities periodically review water quality standards and secure the EPA's approval of any revisions in the standards. If the EPA recommends changes to the standards and the State fails to comply with that recommendation, the Act authorizes the EPA to promulgate water quality standards for the State. [33 U.S.C. § 1313\(c\).](#)” ([Arkansas v. Oklahoma, supra, 503 U.S. at p. 101, 112 S.Ct. 1046.](#))

Part of the federal Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), “[t]he primary means” for enforcing effluent limitations and standards under the Clean Water Act. ([Arkansas v. Oklahoma, supra, 503 U.S. at p. 101, 112 S.Ct. 1046.](#)) The NPDES sets out the conditions under which the federal EPA or a state with an approved water quality control program can issue permits for the discharge of pollutants in wastewater. ([33 U.S.C. § 1342\(a\) & \(b\).](#)) In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits required by federal law. (§ 13374.)

With this federal and state statutory framework in mind, we now turn to the facts of this case.

II. FACTUAL BACKGROUND

This case involves three publicly owned treatment plants that discharge wastewater under NPDES permits issued by the Los Angeles Regional Board.

The City of Los Angeles owns and operates the Donald C. Tillman Water Reclamation Plant (Tillman Plant), which serves the San Fernando Valley. The City of Los Angeles also owns and operates the Los Angeles–Glendale Water Reclamation Plant (Los Angeles–Glendale Plant), which processes wastewater from areas within the City of Los Angeles and the independent cities of Glendale and Burbank. Both the Tillman Plant and the Los Angeles–Glendale Plant

discharge wastewater directly into the Los Angeles River, now a concrete-lined flood control channel that runs through the City of Los Angeles, ending at the Pacific Ocean. The State Board and the Los Angeles Regional Board consider the Los Angeles River to be a navigable water of the United States for purposes of the federal Clean Water Act.

The third plant, the Burbank Water Reclamation Plant (Burbank Plant), is owned and operated by the City of Burbank, ***309 serving residents and businesses within that city. The Burbank Plant discharges wastewater into the Burbank Western Wash, which drains into the Los Angeles River.

*622 All three plants, which together process hundreds of millions of gallons of sewage **867 each day, are tertiary treatment facilities; that is, the treated wastewater they release is processed sufficiently to be safe not only for use in watering food crops, parks, and playgrounds, but also for human body contact during recreational water activities such as swimming.

In 1998, the Los Angeles Regional Board issued renewed NPDES permits to the three wastewater treatment facilities under a basin plan it had adopted four years earlier for the Los Angeles River and its estuary. That 1994 basin plan contained general narrative criteria pertaining to the existing and potential future beneficial uses and water quality objectives for the river and estuary.⁴ The narrative criteria included municipal and domestic water supply, swimming and other recreational water uses, and fresh water habitat. The plan further provided: "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." The 1998 permits sought to reduce these narrative criteria to specific numeric requirements setting daily maximum limitations for more than 30 pollutants present in the treated wastewater, measured in milligrams or micrograms per liter of effluent.⁵

The Cities of Los Angeles and Burbank (Cities) filed appeals with the State Board, contending that achievement of the numeric requirements would be too costly when considered in light of the potential benefit to water quality, and that the pollutant restrictions in the NPDES permits were unnecessary to meet the narrative criteria described in the basin plan. The State Board summarily denied the Cities' appeals.

Thereafter, the Cities filed petitions for writs of administrative mandate in the superior court. They alleged, among other things, that the Los Angeles Regional Board failed to comply with [sections 13241](#) and [13263](#), part of California's Porter-Cologne Act, because it did not consider the economic burden on the Cities in having to reduce substantially the pollutant content of their discharged wastewater. They also alleged that compliance with the pollutant restrictions set out in the NPDES permits issued by the regional *623 board would greatly increase their costs of treating the wastewater to be discharged into the Los Angeles River. According to the City of Los Angeles, its compliance costs would exceed \$50 million annually, representing more than 40 percent of its entire budget for operating its four wastewater treatment plants and its sewer system; the City of Burbank estimated its added costs at over \$9 million annually, a nearly 100 percent increase above its \$9.7 million annual budget for wastewater treatment.

***310 The State Board and the Los Angeles Regional Board responded that [sections 13241](#) and [13263](#) do not require consideration of costs of compliance when a regional board issues a NPDES permit that restricts the pollutant content of discharged wastewater.

The trial court stayed the contested pollutant restrictions for each of the three wastewater treatment plants. It then ruled that [sections 13241](#) and [13263](#) of California's Porter-Cologne Act required a regional board to consider costs of compliance not only when it adopts a basin or water quality plan but also when, as here, it issues an NPDES permit setting the allowable pollutant content of a treatment plant's discharged wastewater. The court found no evidence that the Los Angeles Regional Board had considered economic factors at either stage. Accordingly, the trial court granted the Cities' petitions for writs of mandate, and it ordered the Los Angeles Regional Board to vacate the contested restrictions on pollutants in the wastewater discharge permits issued to the three municipal plants here and to conduct hearings **868 to consider the Cities' costs of compliance before the board's issuance of new permits. The Los Angeles Regional Board and the State Board filed appeals in both the Los Angeles and Burbank cases.⁶

The Court of Appeal, after consolidating the cases, reversed the trial court. It concluded that [sections 13241](#) and [13263](#) require a regional board to take into account "economic considerations" when it adopts water quality standards in a basin plan but not when, as here, the regional board sets specific pollutant restrictions in wastewater discharge permits

intended to satisfy those standards. We granted the Cities' petition for review.

*624 III. DISCUSSION

A. Relevant State Statutes

The California statute governing the issuance of *wastewater permits* by a regional board is [section 13263](#), which was enacted in 1969 as part of the Porter–Cologne Act. (See 26 Cal.Rptr.3d pp. 306–307, 108 P.3d p. 865, *ante.*) [Section 13263](#) provides in relevant part: “*The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge [of wastewater]. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.*” (§ 13263, *subd. (a)*, italics added.)

[Section 13241](#) states: “Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

***311 “(a) Past, present, and probable future beneficial uses of water.

“(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

“(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

“(d) *Economic considerations.*

“(e) The need for developing housing within the region.

“(f) The need to develop and use recycled water.” (Italics added.)

The Cities here argue that [section 13263](#)'s express reference to [section 13241](#) requires the Los Angeles Regional Board to consider [section 13241](#)'s listed factors, notably “[e]conomic considerations,” before issuing NPDES permits requiring specific pollutant reductions in discharged effluent or treated wastewater.

*625 Thus, at issue is language in [section 13263](#) stating that when a regional board “prescribe[s] requirements as to the nature of any proposed discharge” of treated wastewater it must “take into consideration” certain factors including “the provisions of [Section 13241](#).” According to the Cities, this statutory language requires that a regional board make an independent evaluation of the [section 13241](#) factors, including “economic considerations,” before restricting the pollutant content in an NPDES permit. This was the view expressed in the trial court's ruling. The Court of Appeal rejected that view. It held that a regional board need consider the [section 13241](#) factors only when it adopts a basin or water quality plan, but not when, as in this case, it issues a wastewater discharge **869 permit that sets specific numeric limitations on the various chemical pollutants in the wastewater to be discharged. As explained below, the Court of Appeal was partly correct.

B. Statutory Construction

When construing any statute, our task is to determine the Legislature's intent when it enacted the statute “so that we may adopt the construction that best effectuates the purpose of the law.” (*Hassan v. Mercy American River Hospital* (2003) 31 Cal.4th 709, 715, 3 Cal.Rptr.3d 623, 74 P.3d 726; *Esberg v. Union Oil Co.* (2002) 28 Cal.4th 262, 268, 121 Cal.Rptr.2d 203, 47 P.3d 1069.) In doing this, we look to the statutory language, which ordinarily is “the most reliable indicator of legislative intent.” (*Hassan, supra*, at p. 715, 3 Cal.Rptr.3d 623, 74 P.3d 726.)

As mentioned earlier, our Legislature's 1969 enactment of the Porter–Cologne Act, which sought to ensure the high quality of water in this state, predated the 1972 enactment by Congress of the precursor to the federal Clean Water Act. Included in California's original Porter–Cologne Act were [sections 13263](#) and [13241](#). [Section 13263](#) directs regional boards, when issuing wastewater discharge permits, to take into account various factors, including those set out in [section 13241](#). Listed among the [section 13241](#) factors is “[e]conomic considerations.” (§ 13241, *subd. (d)*.) The plain language of [sections 13263](#) and [13241](#) indicates the Legislature's intent

in 1969, when these statutes were enacted, that a regional board consider the cost of compliance when setting effluent limitations in a wastewater discharge permit.

Our construction of [sections 13263](#) and [13241](#) does not end with their plain statutory language, however. We must also analyze them in the context of the statutory scheme of which they are a part. (****312** [State Farm Mutual Automobile Ins. Co. v. Garamendi](#) (2004) 32 Cal.4th 1029, 1043, 12 Cal.Rptr.3d 343, 88 P.3d 71.) Like [sections 13263](#) and [13241](#), [section 13377](#) is part of the Porter–Cologne Act. But unlike the former two statutes, [section 13377](#) was ***626** not enacted until 1972, shortly after Congress, through adoption of the Federal Water Pollution Control Act Amendments, established a comprehensive water quality policy for the nation.

[Section 13377](#) specifies that wastewater discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, [section 13377](#) forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act. That act prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law ([33 U.S.C. § 1311\(a\)](#)), and publicly operated wastewater treatment plants such as those before us here must comply with the act's clean water standards, regardless of cost (see *id.*, [§§ 1311\(a\), \(b\)\(1\)\(B\) & \(C\), 1342\(a\)\(1\) & \(3\)](#)). Because [section 13263](#) cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a wastewater discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards.⁷ Such a construction of [section 13263](#) would not only be inconsistent with federal law, it would also be inconsistent with the Legislature's ****870** declaration in [section 13377](#) that all discharged wastewater must satisfy federal standards.⁸ This was also the conclusion of the Court of Appeal. Moreover, under the federal Constitution's supremacy clause (art. VI), a state law that conflicts with federal law is “ ‘without effect.’ ” ([Cipollone v. Liggett Group, Inc.](#) (1992) 505 U.S. 504, 516, 112 S.Ct. 2608, 120 L.Ed.2d 407; [Dowhal v. SmithKline Beecham Consumer Healthcare](#) (2004) 32 Cal.4th 910, 923, 12 Cal.Rptr.3d 262, 88 P.3d 1.) To comport with the principles of federal supremacy, California law cannot authorize this ***627** state's regional boards to allow the discharge of pollutants into the navigable waters of the United States in

concentrations ****313** that would exceed the mandates of federal law.

Thus, in this case, whether the Los Angeles Regional Board should have complied with [sections 13263](#) and [13241](#) of California's Porter–Cologne Act by taking into account “economic considerations,” such as the costs the permit holder will incur to comply with the numeric pollutant restrictions set out in the permits, depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act. We therefore remand this matter for the trial court to resolve that issue.

C. Other Contentions

The Cities argue that requiring a regional board at the wastewater discharge permit stage to consider the permit holder's cost of complying with the board's restrictions on pollutant content in the water is consistent with federal law. In support, the Cities point to certain provisions of the federal Clean Water Act. They cite [section 1251\(a\)\(2\) of title 33 United States Code](#), which sets, as a national goal “*wherever attainable*,” an interim goal for water quality that protects fish and wildlife, and [section 1313\(c\)\(2\)\(A\)](#) of the same title, which requires consideration, among other things, of waters' “*use and value for navigation*” when revising or adopting a “water quality standard.” (Italics added.) These two federal statutes, however, pertain not to permits for wastewater discharge, at issue here, but to establishing water quality standards, not at issue here. Nothing in the federal Clean Water Act suggests that a state is free to disregard or to weaken the federal requirements for clean water when an NPDES permit holder alleges that compliance with those requirements will be too costly.

At oral argument, counsel for amicus curiae National Resources Defense Council, which argued on behalf of California's State Board and regional water boards, asserted that the federal Clean Water Act incorporates state water policy into federal law, and that therefore a regional board's consideration of economic factors to justify greater pollutant concentration in discharged wastewater would conflict with the federal act even if the specified pollutant restrictions were not less stringent than those required under federal law. We are not persuaded. The federal Clean Water Act reserves to the states significant aspects of water quality policy ([33 U.S.C. § 1251\(b\)](#)), and it specifically grants the states authority to “enforce any effluent limitation” that is not “*less stringent*” than the federal standard (*id.* § 1370, italics added). It does not prescribe or restrict the factors that a state may consider

when exercising this reserved authority, and thus it does not prohibit *628 a state—when imposing effluent limitations that are *more stringent* than required by federal law—from taking into account the economic effects of doing so.

Also at oral argument, counsel for the Cities asserted that if the three municipal wastewater treatment facilities ceased releasing their treated wastewater into the concrete channel that makes up the Los Angeles River, it would (other than during the rainy season) contain no water at all, and thus would not be a “navigable water” of the **871 United States subject to the Clean Water Act. (See [Solid Waste Agency v. United States Army Corps of Engineers \(2001\) 531 U.S. 159, 172, 121 S.Ct. 675, 148 L.Ed.2d 576](#) [“The term ‘navigable’ has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made.”].) It is unclear when the Cities first raised this issue. The Court of Appeal did not discuss it in its opinion, and the Cities did not seek rehearing on this ground. (See ***314 [Cal. Rules of Court, rule 28\(c\)\(2\)](#).) Concluding that the issue is outside our grant of review, we do not address it.

CONCLUSION

Through the federal Clean Water Act, Congress has regulated the release of pollutants into our national waterways. The states are free to manage their own water quality programs so long as they do not compromise the federal clean water standards. When enacted in 1972, the goal of the Federal Water Pollution Control Act Amendments was to *eliminate* by the year 1985 the discharge of pollutants into the nation's navigable waters. In furtherance of that goal, the Los Angeles Regional Board indicated in its 1994 basin plan on water quality the intent, insofar as possible, to remove from the water in the Los Angeles River toxic substances in amounts harmful to humans, plants, and aquatic life. What is not clear from the record before us is whether, in limiting the chemical pollutant content of wastewater to be discharged by the Tillman, Los Angeles–Glendale, and Burbank wastewater treatment facilities, the Los Angeles Regional Board acted only to implement requirements of the federal Clean Water Act or instead imposed pollutant limitations that exceeded the federal requirements. This is an issue of fact to be resolved by the trial court.

DISPOSITION

We affirm the judgment of the Court of Appeal reinstating the wastewater discharge permits to the extent that the specified numeric limitations on chemical pollutants are necessary to satisfy federal Clean Water Act requirements for treated wastewater. The Court of Appeal is directed to remand this *629 matter to the trial court to decide whether any numeric limitations, as described in the permits, are “more stringent” than required under federal law and thus should have been subject to “economic considerations” by the Los Angeles Regional Board before inclusion in the permits.

WE CONCUR: [GEORGE, C.J.](#), [BAXTER](#), [WERDEGAR, CHIN](#), and [MORENO, JJ.](#)

Concurring Opinion by BROWN, J.

I write separately to express my frustration with the apparent inability of the government officials involved here to answer a simple question: How do the federal clean water standards (which, as near as I can determine, are the state standards) prevent the state from considering economic factors? The majority concludes that because “the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic factors to justify imposing pollutant restrictions that are *less stringent* than applicable federal standards require.” (Maj. opn., *ante*, 26 Cal.Rptr.3d at p. 306, 108 P.3d at p. 864.) That seems a pretty self-evident proposition, but not a useful one. The real question, in my view, is whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions that *meet* the clean water standards in more cost-effective and economically efficient ways. I can see no reason why a federal law—which purports to be an example of cooperative federalism—would decree such a result. I do not think the majority's reasoning is at fault here. Rather, the agencies involved seemed to have worked hard to make this simple question impenetrably obscure.

A brief review of the statutory framework at issue is necessary to understand my concerns.

***315 **872 I. Federal Law

“In 1972, Congress enacted the Federal Water Pollution Control Act ([33 U.S.C. § 1251 et seq.](#)), commonly known as the Clean Water Act (CWA) [Citation.] ... [¶] Generally, the CWA ‘prohibits the discharge of any pollutant except in compliance with one of several statutory exceptions. [Citation.]’ ... The most important of those exceptions is pollution discharge under a valid NPDES [National Pollution Discharge Elimination System] permit, which can be issued either by the Environmental Protection Agency (EPA), or by an EPA-approved state permit program such as California’s. [Citations.] NPDES permits are valid for five years. [Citation.] [¶] Under the CWA’s NPDES permit program, the states are required to develop *water quality standards*. [Citations.] A water quality standard ‘establish[es] the desired condition of a waterway.’ [Citation.] A water quality standard for any *630 given waterway, or ‘water body,’ has two components: (1) the designated beneficial uses of the water body and (2) the *water quality criteria* sufficient to protect those uses. [Citations.] [¶] Water quality criteria can be either *narrative* or *numeric*. [Citation.]” ([Communities for a Better Environment v. State Water Resources Control Bd.](#) (2003) 109 Cal.App.4th 1089, 1092–1093, 1 Cal.Rptr.3d 76.)

With respect to satisfying water quality standards, “a polluter must comply with *effluent limitations*. The CWA defines an effluent limitation as ‘any restriction established by a State or the [EPA] Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance.’ [Citation.] ‘Effluent limitations are a means of *achieving* water quality standards.’ [Citation.] [¶] NPDES permits establish effluent limitations for the polluter. [Citations.] CWA’s NPDES permit system provides for a two-step process for the establishing of effluent limitations. First, the polluter must comply with *technology-based effluent limitations*, which are limitations based on the best available or practical technology for the reduction of water pollution. [Citations.] [¶] Second, the polluter must also comply with more stringent *water quality-based effluent limitations* (WQBEL’s) where applicable. In the CWA, Congress ‘supplemented the “technology-based” effluent limitations with “water quality-based” limitations “so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.’ ” [Citation.] [¶] The CWA makes WQBEL’s applicable to a given polluter whenever WQBEL’s are ‘necessary to meet water quality standards, treatment standards, or schedules

of compliance, established pursuant to any State law or regulations....’ [Citations.] Generally, NPDES permits must conform to state water quality laws insofar as the state laws impose more stringent pollution controls than the CWA. [Citations.] Simply put, WQBEL’s implement water quality standards.” ([Communities for a Better Environment v. State Water Resources Control Bd.](#), *supra*, 109 Cal.App.4th at pp. 1093–1094, 1 Cal.Rptr.3d 76, *fn.* omitted.)

This case involves water quality-based effluent limitations. As set forth above, “[u]nder the CWA, states have the primary role in promulgating water quality standards.” ([Piney Run Preservation Ass’n v. Commrs. of Carroll Co.](#) (4th Cir.2001) 268 F.3d 255, 265, *fn.* 9.) “Under the CWA, the water quality standards referred to in section 301 [see [33 U.S.C. § 1311](#)] are primarily the states’ handiwork.” ***316 ([American Paper Institute, Inc. v. U.S. Envtl. Protection Agency](#) (D.C.Cir.1993) 996 F.2d 346, 349 (*American Paper*).) In fact, upon the 1972 passage of the CWA, “[s]tate water quality standards in effect at the time ... were deemed to be the initial water quality benchmarks for CWA purposes.... The states were to revisit and, if *631 necessary, revise those initial standards at least once every three years.” (*American Paper*, at p. 349.) Therefore, “once a water quality standard has been promulgated, section 301 of the CWA requires all NPDES permits for point sources to incorporate discharge limitations necessary to satisfy that standard.” (*American Paper*, at p. 350.) Accordingly, it appears that in most instances, **873 state water quality standards are identical to the federal requirements for NPDES permits.

II. State Law

In California, pursuant to the Porter–Cologne Water Quality Control Act ([Wat.Code, § 13000 et seq.](#); Stats.1969, ch. 482, § 18, p. 1051; hereafter Porter–Cologne Act), the regional water quality control boards establish water quality standards—and therefore federal requirements for NPDES permits—through the adoption of water quality control plans (basin plans). The basin plans establish water quality objectives using enumerated factors—including economic factors—set forth in [Water Code section 13241](#).

In addition, as one court observed: “The Porter–Cologne Act ... established nine regional boards to prepare water quality plans (known as basin plans) and issue permits governing the discharge of waste. ([Wat.Code, §§ 13100, 13140, 13200, 13201, 13240, 13241, 13243.](#)) The Porter–

Cologne Act identified these permits as ‘waste discharge requirements,’ and provided that the waste discharge requirements must mandate compliance with the applicable regional water quality control plan. ([Wat.Code, §§ 13263, subd. \(a\), 13377, 13374.](#)) [¶] Shortly after Congress enacted the Clean Water Act in 1972, the California Legislature added Chapter 5.5 to the Porter–Cologne Act, for the purpose of adopting the necessary federal requirements to ensure it would obtain EPA approval to issue NPDES permits. ([Wat.Code, § 13370, subd. \(c\).](#)) As part of these amendments, the Legislature provided that the state and regional water boards ‘shall, as required or authorized by the [Clean Water Act], issue waste discharge requirements ... which apply and ensure compliance with all applicable provisions [of the Clean Water Act], together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.’ ([Wat.Code, § 13377.](#)) [Water Code section 13374](#) provides that ‘[t]he term “waste discharge requirements” as referred to in this division is the equivalent of the term “permits” as used in the [Clean Water Act].’ [¶] California subsequently obtained the required approval to issue NPDES permits. [Citation.] Thus, the waste discharge requirements issued by the regional water boards ordinarily also serve as NPDES permits under federal law. ([Wat.Code, § 13374.](#))” ([Building Industry Assn. of San Diego County v. State Water Resources Control Bd.](#) (2004) 124 Cal.App.4th 866, 875, 22 Cal.Rptr.3d 128.)

***632** Applying this federal-state statutory scheme, it appears that throughout this entire process, the Cities of Burbank and Los Angeles (Cities) were unable to have economic factors considered because the Los Angeles Regional Water Quality Control Board (Board)—the body responsible to enforce the statutory framework—failed to comply with its statutory mandate.

*****317** For example, as the trial court found, the Board did not consider costs of compliance when it initially established its basin plan, and hence the water quality standards. The Board thus failed to abide by the statutory requirement set forth in [Water Code section 13241](#) in establishing its basin plan. Moreover, the Cities claim that the initial narrative standards were so vague as to make a serious economic analysis impracticable. Because the Board does not allow the Cities to raise their economic factors in the permit approval stage, they are effectively precluded from doing so. As a result, the Board appears to be playing a game of “gotcha” by allowing the Cities to raise economic considerations when

it is not practical, but precluding them when they have the ability to do so.

Moreover, the Board acknowledges that it has neglected other statutory provisions that might have provided an additional opportunity to air these concerns. As set forth above, pursuant to the CWA, “[t]he states were to revisit and, if necessary, revise those initial standards at least once every three years—a process commonly known as triennial review. [Citation.] Triennial reviews consist of public hearings in which current water quality standards are examined to assure that they ‘protect the public health or welfare, enhance the quality of water and serve the purposes’ of the Act. [Citation.] Additionally, the CWA ****874** directs states to consider a variety of competing policy concerns during these reviews, including a waterway’s ‘use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes.’” ([American Paper, supra, 996 F.2d at p. 349.](#))

According to the Cities, “[t]he last time that the narrative water quality objective for toxicity contained in the Basin Plan was reviewed and modified was 1994.” The Board does not deny this claim. Accordingly, the Board has failed its duty to allow public discussion—including economic considerations—at the required intervals when making its determination of proper water quality standards.

What is unclear is why this process should be viewed as a contest. State and local agencies are presumably on the same side. The costs will be paid by taxpayers and the Board should have as much interest as any other agency in fiscally responsible environmental solutions.

***633** Our decision today arguably allows the Board to continue to shirk its statutory duties. The majority holds that when read together, [Water Code sections 13241, 13263, and 13377](#) do not allow the Board to consider economic factors when issuing NPDES permits to satisfy federal CWA requirements. (Maj. opn., *ante*, 26 Cal.Rptr.3d at pp. 311–312, 108 P.3d at pp. 869–870.) The majority then bifurcates the issue when it orders the Court of Appeal “to remand this matter to the trial court to decide whether any numeric limitations, as described in the permits, are ‘more stringent’ than required under federal law and thus should have been subject to ‘economic considerations’ by the Los Angeles Regional Board before inclusion in the permits.” (*Id.* at p. 314, 108 P.3d at p. 871.)

The majority overlooks the feedback loop established by the CWA, under which federal standards are linked to state-established water quality standards, including narrative water quality criteria. (See [33 U.S.C. § 1311\(b\)\(1\)\(C\)](#); [40 C.F.R. § 122.44\(d\)\(1\)](#) (2004).) Under the CWA, NPDES permit requirements include the state narrative criteria, which are incorporated into the Board's basin plan under the description "no toxins in toxic amounts." As far as I can determine, NPDES permits ****318** designed to achieve this narrative criteria (as well as designated beneficial uses) will usually implement the state's basin plan, while satisfying federal requirements as well.

If federal water quality standards are typically identical to state standards, it will be a rare instance that a state exceeds its own requirements and economic factors are taken into consideration.¹ In light of the Board's initial failure to consider costs of compliance and its repeated failure to conduct required triennial reviews, the result here is an unseemly bureaucratic bait-and-switch that we should not endorse. The likely outcome of the majority's decision is that the Cities will be economically burdened to meet standards imposed on them in a highly questionable manner.² In these

times of tight fiscal budgets, it is difficult to imagine imposing additional financial burdens on municipalities without at least allowing them to present alternative views.

Based on the facts of this case, our opinion today appears to largely retain the status quo for the Board. If the Board can actually demonstrate that only the precise limitations at issue here, implemented in only one way, will achieve the desired water standards, perhaps its obduracy is justified. That case has yet to be made.

634** Accordingly, I cannot conclude that the majority's decision is wrong. The analysis *875** may provide a reasonable accommodation of conflicting provisions. However, since the Board's actions "make me wanna holler and throw up both my hands,"³ I write separately to set forth my concerns and concur in the judgment—*dubitante*.⁴

All Citations

35 Cal.4th 613, 108 P.3d 862, 26 Cal.Rptr.3d 304, 60 ERC 1470, 35 Env'tl. L. Rep. 20,071, 05 Cal. Daily Op. Serv. 2861, 2005 Daily Journal D.A.R. 3870

Footnotes

* Brown, J., did not participate therein.

¹ Further undesignated statutory references are to the Water Code.

² The Los Angeles water region "comprises all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the southeasterly boundary of Los Angeles County from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages." (§ 13200, subd. (d).)

³ A "point source" is "any discernable, confined and discrete conveyance" and includes "any pipe, ditch, channel ... from which pollutants ... may be discharged." ([33 U.S.C. § 1362\(14\)](#).)

⁴ This opinion uses the terms "narrative criteria" or descriptions, and "numeric criteria" or effluent limitations. Narrative criteria are broad statements of desirable water quality goals in a water quality plan. For example, "no toxic pollutants in toxic amounts" would be a narrative description. This contrasts with numeric criteria, which detail specific pollutant concentrations, such as parts per million of a particular substance.

⁵ For example, the permits for the Tillman and Los Angeles–Glendale Plants limited the amount of fluoride in the discharged wastewater to 2 milligrams per liter and the amount of mercury to 2.1 micrograms per liter.

- [6](#) Unchallenged on appeal and thus not affected by our decision are the trial court's rulings that (1) the Los Angeles Regional Board failed to show how it derived from the narrative criteria in the governing basin plan the specific numeric pollutant limitations included in the permits; (2) the administrative record failed to support the specific effluent limitations; (3) the permits improperly imposed daily maximum limits rather than weekly or monthly averages; and (4) the permits improperly specified the manner of compliance.
- [7](#) The concurring opinion misconstrues both state and federal clean water law when it describes the issue here as “whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions *that meet the clean water standards in more cost-effective and economically efficient ways.*” (Conc. Opn. of Brown, J., *post*, 26 Cal.Rptr.3d p. 314, 108 P.3d at p. 871, some italics added.) This case has nothing to do with meeting federal standards in more cost effective and economically efficient ways. State law, as we have said, allows a regional board to consider a permit holder's compliance cost to *relax* pollutant concentrations, as measured by numeric standards, for pollutants in a wastewater discharge permit. ([§§ 13241 & 13263.](#)) Federal law, by contrast, as stated above in the text, “prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law ([33 U.S.C. § 1311\(a\)](#)), and publicly operated wastewater treatment plants such as those before us here must comply with the [federal] act's *clean water standards, regardless of cost* (see *id.*, [§§ 1311\(a\), \(b\)\(1\)\(B\) & \(C\), 1342\(a\)\(1\) & \(3\).](#))” (Italics added.)
- [8](#) As amended in 1978, [section 13377](#) provides for the issuance of waste discharge permits that comply with federal clean water law “together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.” We do not here decide how this provision would affect the cost-consideration requirements of [sections 13241](#) and [13263](#) when more stringent effluent standards or limitations in a permit are justified for some reason independent of compliance with federal law.
- [1](#) (But see [In the Matter of the Petition of City and County of San Francisco, San Francisco Baykeeper et al.](#) (Order No. WQ 95–4, Sept. 21, 1995) 1995 WL 576920.)
- [2](#) Indeed, given the fact that “water quality standards” in this case are composed of broadly worded components (i.e., a narrative criteria and “designated beneficial uses of the water body”), the Board possessed a high degree of discretion in setting NPDES permit requirements. Based on the Board's past performance, a proper exercise of this discretion is uncertain.
- [3](#) Marvin Gaye (1971) “Inner City Blues.”
- [4](#) I am indebted to Judge Berzon for this useful term. (See [Credit Suisse First Boston Corp. v. Grunwald](#) (9th Cir.2005) 400 F.3d 1119 (conc. opn. of Berzon, J.).)

150 Cal.App.2d 671
District Court of Appeal, Second
District, Division 1, California.

Glenn D. COREY, Plaintiff and Appellant,

v.

Goodwin J. KNIGHT, Governor of the
State of California, et al., Defendants,
Clarke Gray, Respondent.

Civ. No. 22068.

|

May 6, 1957.

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Hearing Denied July 3, 1957.

Synopsis

Declaratory judgment action to determine eligibility of judge of the justice court to position of judge of municipal court and to determine judge's retirement rights. The Superior Court, Ventura County, Charles F. Blackstock, J., entered judgment adverse to judge of the justice court, and he appealed. The District Court of Appeal, Fourt, J., held that judge would be ineligible to be municipal court judge, and that, in event that municipal court were to come into existence, judge, who was over 70, would be compulsorily retired and be entitled to retirement benefits under the County Employees Retirement Law of 1937 when the municipal court came into existence.

Judgment affirmed.

Attorneys and Law Firms

****674 *672** Waite & Drapeau, by David R. Drapeau, Ventura, for appellant.

Charles Kaplan, Beverly Hills, Arden T. Jensen, Solvang, amici curiae.

Roy A. Gustafson, Dist. Atty., Ventura County, Ventura, for respondent.

Opinion

FOURT, Justice.

This is an appeal from a judgment in a declaratory relief action wherein it was adjudged 'that if plaintiff is Judge of the Justice Court of the Ventura Judicial District at the time

when the district is found to have over 40,000 inhabitants, (1) a Municipal Court will thereupon supersede the Justice Court, (2) plaintiff will be ineligible to be Judge of the Municipal Court, (3) a vacancy will exist to be filled by ***673** appointment of the Governor, (4) plaintiff will be compulsorily retired and (5) plaintiff will receive retirement benefits under the County Employees Retirement Law of 1937 [[Gov.Code, § 31450 et seq.](#)].'

A resume of the facts in the case is as follows: In about 1947, the legislature requested the Judicial Council to make a survey of all courts in California exercising jurisdiction inferior to the superior court. After an extensive study the Judicial Council, in 1949, recommended to the legislature a plan for the reorganization of such courts (Twelfth Binnial Report [1948], Judicial Council of California). The legislature, through committees, conducted public hearings, and as a result thereof some changes and additions were made in the proposed constitutional amendments and the proposed statutes drafted by the Council. The interpretation to be given to some of the words added in one of the constitutional amendments which was proposed and adopted ([Article VI, section 23](#)) is the only ****675** real problem to be determined in this case. The language in question is contained in the 'exception' section, generally referred to as the 'Grandfather Clause', the pertinent parts of which are as follows:

'No person shall be eligible to the office of a Justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice of an existing court who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become the judge of a municipal court by which the existing court is superseded upon the establishment of said municipal court or at the first election of judges thereto and for any consecutive terms thereafter for which he may be reelected * * *.'

The legislature voted to submit the proposed constitutional amendment to the People at the General Election, November 7, 1950. The proposition was Number 3 on the ballot at that time, and was adopted by the People by a large majority. At the same election, [section 11 of Article VI of the Constitution](#) was amended to provide for only two types of courts inferior to the superior court, namely, justice courts and municipal courts, and further to validate the laws relating to

judicial districts enacted in the legislative session of 1949, in anticipation of the adoption of the constitutional amendments. The *674 amendments provided, among other things, in substance, that each county should be divided into judicial districts and that if the population of any district were over 40,000, the district should have a municipal court, or if under 40,000, a justice court. The legislature, by section 1 of Chapter 1511, Statutes 1949, [Government Code, § 71040](#), directed the Board of Supervisors to district their counties. The new plan was to become effective January 1, 1952, except where two or more incumbent judges would be eligible to be judges of the new court, in which case section 2 of Chapter 1510, Statutes 1949, [Government Code, §§ 71080, 71081](#), provided that they 'shall not automatically succeed to judicial positions in the municipal or justice court, and the existing courts shall continue to function within the district until the first judge or judges of said municipal or justice court shall be elected by the qualified electors of the district at the first general state election held following the expiration of 90 days and qualify.'

[Article VI, section 11](#), as amended in 1950, also contained a provision that 'existing courts shall continue to function as presently organized until the first selection and qualification of the judge or judges of the municipal or justice court, at which time, unless otherwise provided by law, pending actions, trials and all pending business of existing courts shall be transferred to and become pending in the municipal or justice court established for the judicial district or city and county in which they are situated, and all records of such superseded courts shall be transferred to, and thereafter be and become records of said municipal or justice court.'

On July 6, 1944, Ventura township was one of nine townships into which Ventura county was divided. The court of Ventura township was a class B justice court. The justice of the peace who presided over the court died and appellant herein was appointed by the Board of Supervisors to fill the vacancy.

The City of San Buenaventura (hereinafter referred to as Ventura) is located in the territorial limits of Ventura township. The charter of Ventura provides for a police court and such court was presided over by Judge B. L. Gregg, a former member of the State Bar. Appellant's original term as justice of the peace expired January 6, 1947. He was elected to that position for the term from January 6, 1947, to January 2, 1951, and was re-elected to that position for the term from January 2, 1951, to January 3, 1955. On October 26, 1951, the **676 population of the township having been found to be over 30,000 by the 1950 census, the court became a

class A justice court. The boundaries of the Ventura judicial district were *675 established as of September 4, 1951, by Ordinance No. 472 of the board of supervisors of Ventura county, in conformity with the Statutes of 1949. The area of the district included, but was larger than, Ventura township. The population of the district was less than 40,000.

On January 1, 1952, there were two judicial officers of courts within the area of Ventura judicial district, namely, appellant as justice of the peace of Ventura township, and B. L. Gregg as judge of the police court in the city of Ventura. Both were candidates for the office of judge of the justice court of Ventura judicial district at the election in 1952. Appellant was not and never has been an attorney, and had not passed any examination prescribed by the judicial council. Appellant, who was over 70 years of age at the time of the election, was elected and took office as judge of the justice court on January 5, 1953, for the term ending January 5, 1959.

The justice court of Ojai judicial district began functioning in January, 1952, because only one incumbent was eligible to the judgeship. The remaining four districts in Ventura county were inoperative as such, pending the election of judges. Judges were elected in 1952, and the four districts began functioning as such on January 5, 1953, or, in other words, on January 5, 1953, Ventura county have five judicial districts, each with a functioning justice court.

An action was filed in the superior court of Ventura county on July 5, 1956, for the purpose of having it declared that Ventura judicial district had a population of over forty thousand. On September 6, 1956, the trial judge of that court found that there were forty thousand or more persons in the district, and a municipal court is now in existence. Appellant contends that he is eligible to be, and that he is the judge of such municipal court now in existence. Appellant further asserts that he will continue to be a judge of the justice court if found to be ineligible to be the municipal court judge, until a municipal court judge is elected for the term beginning January 5, 1959. Respondent asserts that appellant is ineligible and he cannot pay appellant now that such municipal court is established; that appellant's term is now terminated as of September 6, 1956, the date upon which the municipal court was declared to be in existence, and appellant is compulsorily retired, and that a vacancy existed which was to be filled by appointment by the Governor.

Appellant, in his briefs and in the oral argument, has made *676 issue of the first contention heretofore mentioned, namely, that he is eligible to become judge of the municipal

court of Ventura judicial district, and no argument or authorities were presented on the other matters, and we therefore assume that the disposition of the first question will dispose of this appeal.

Honorable Charles F. Blackstock, the learned trial judge, prepared findings of fact and conclusions of law and in his conclusions set forth the applicable law. We believe that the commentary of the trial judge concisely and correctly sets forth the law and we adopt his statements in reference thereto, as follows:

‘Both parties concede that if Ventura Judicial District is found to have a population of 40,000 persons and if plaintiff is eligible to be a Municipal Court judge, the court will begin to function immediately with plaintiff as judge. [Government Code, Section 71080](#). Not being an attorney, plaintiff is eligible, if at all, only under this proviso of [Section 23 of Article VI of the Constitution](#):

‘[A]ny elected judge or justice of an *existing court* who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become a judge of a municipal court by which the *existing court* is *superseded* upon the establishment of said municipal court. * * *’ (Emphasis added.)

***677** ‘The basic question is the meaning of the words ‘existing court’. The amendment was adopted November 7, 1950. Do the words refer to a court then existing or to a court existing at the time the amendment is invoked?’

‘The court over which plaintiff presided on November 7, 1950 was the Justice’s Court of Ventura Township. The court over which he now presides is the Justice Court of Ventura Judicial District. If those two courts are the same court (identified by different names), plaintiff is clearly eligible regardless of the time to which the words ‘existing court’ refer.

‘A Class B Justice’s Court had jurisdiction over cases involving claims up to \$300. A Justice Court has jurisdiction of Claims up to \$500. The jurisdiction of a Justice’s Court was not exclusive and, in fact, was shared in Ventura Township with the Police Court. The jurisdiction of the Justice Court is exclusive within its territorial area. The territorial area of a township was not necessarily the same as the territorial area of a judicial district and, in fact, the boundaries of the Ventura Judicial District are larger than the boundaries of ***677** Ventura Township. (There were nine townships in Ventura County, whereas there are only five judicial districts.) The presiding officer of a Justice’s Court was a Justice of the

Peace. The presiding officer of a Justice Court is a Judge. There were no qualifications for a Justice of the Peace. A Judge of a Justice Court must either be a lawyer or have passed an examination prescribed by the Judicial Council. The term of a Justice of the Peace was four years. The term of a Judge of the Justice Court is six years. It appears, therefore, that the two courts are different and are not the same.

‘This conclusion is fortified by language used in the pertinent laws. [Article 6, Section 11 of the Constitution](#) refers to the fact that ‘existing courts [in a judicial district] shall continue to function’ until the new justice court is established at which time all records of such superseded courts shall be transferred to [the] * * * justice court.’ [Government Code, Section 71080](#) provided that where two persons were eligible to be judge of the new justice court (as were Justice of the Peace Glenn Corey and Judge B. L. Gregg in the Ventura Judicial District), ‘such incumbents shall not automatically succeed to judicial positions [on January 1, 1952] in the * * * justice court, and the existing courts shall continue to function within the district until the first judge * * * of such * * * justice court [is] elected [for the term beginning January 5, 1953].’ Similarly, Chapter 14, Statutes of 1952, First Extraordinary Session, referred to the fact that:

‘Certain Class B justices’ courts will *remain in existence* until January 5, 1953, under the inferior court reorganization program, after which time there will be no courts in the State inferior to the superior courts except municipal and justice courts.’ (Emphasis added.)

‘Thus it is plain that the Justice’s Court of Ventura Township is not the same as the Justice Court of Ventura Judicial District.

‘Which, then, is the ‘existing court’ referred to in the eligibility clause of the Constitution? If it is the Justice Court of Ventura Judicial District, plaintiff is ineligible because plaintiff has not ‘served in that capacity [that is, judge] by election or appointment for five consecutive years immediately preceding [November 7, 1950].’ This is so because that court did not exist *before* January 5, 1953. If it is the Justice’s Court of Ventura Township, plaintiff is ineligible because that court will not be ‘superseded upon the establishment of said municipal court.’ This is so because that court ***678** did not exist *after* January 5, 1953 and cannot be superseded in 1956. That court was superseded on January 5, 1953 and plaintiff holds his present position pursuant to [Section 71601 of the Government Code](#) which made him eligible to be Judge of the Justice Court solely because he

was ‘the incumbent of a superseded inferior court.’ In either event, plaintiff is ineligible. (Had a Municipal Court been established ****678** between November 7, 1950 and January 5, 1953, plaintiff would have been eligible to be judge.)

‘The conclusion that plaintiff is ineligible has been reached by the Attorney General ([21 Ops.Cal.Atty.Gen. 152](#)) and by defendant county auditor. Where the Attorney General has interpreted a law in a written opinion and that position has been adopted by an administrative agency, the ‘administrative application of an act is entitled to respect by the courts, and unless clearly erroneous is a significant factor to be considered in ascertaining the meaning of a statute.’ [Mudd v. McColgan \(1947\), 30 Cal.2d 463 \[183 P.2d 10\]](#).

‘Proposition 19 on the ballot in 1954 was this:

‘Proposed Amendment to [Article VI](#)

‘[Sec. 23](#). No person shall be eligible to the office of a justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice who has served by election or appointment *as such judge or justice of a court superseded by a justice or municipal court* for five consecutive years immediately preceding *November 7, 1950, and has served continuously as a judge of such superseding court after said date until the establishment of a municipal court*, shall be eligible to become the judge of a municipal court which *supersedes* the court of which he is judge upon the establishment of said municipal court or at the first election of judge thereto and for any consecutive terms thereafter for which he may be reelected. The requirement of consecutive years of judicial service shall be deemed to have been met even though interrupted by service in the armed forces of the United States during the period of war.’

***679** ‘In the pamphlet sent to all voters, the following argument was made in favor of the proposition:

‘The voters of California at the 1950 general election adopted a constitutional amendment providing for the reorganization of the inferior courts of this State and reducing the number of such courts to two classes known as municipal courts and justice courts. The Constitution then required admission to practice law before the Supreme Court for at least five years before a person is eligible to be a municipal court judge. The 1950 amendment made any elective judge or justice of an existing court superseded by a municipal court eligible to become judge if he had served in his present capacity for five

consecutive years immediately preceding the effective date of the amendment. It was the intent and spirit of the amendment that experienced incumbent Justices of the Peace would be permitted to continue in office, even though their courts were changed to municipal courts without requiring that they be lawyers.

‘The Attorney General of California last year gave an opinion that the present Justices who are not attorneys would not be eligible to become the judges of municipal courts when such a court succeeds their justice courts.

‘Following the opinion of the Attorney General, both houses of the Legislature unanimously voted to submit the present amendment to the Constitution, for the reason that it was the concensus of the Legislature that incumbent Justices who qualify as to consecutive years of service should not be ineligible to continue as municipal court judges because they are not attorneys.

‘By adopting the present amendment the people will remove any doubt as to the status of incumbent Justices who are not attorneys and they will be eligible to become municipal judges upon the conversion of their courts if they were eligible to do so in 1950.

****679** ‘There should be nothing in the administration of justice in municipal courts which requires men who have had long experience as judges to be attorneys. The Justices of the Peace have always been close to the people and responsive to their needs in matter over which they have jurisdiction, and it is felt that when a Justice has been in office for many years, he has met with approval at the hands of the people, even though he is not an attorney.

‘This amendment merits the approval of the people for the reasons herein set forth, in order to protect incumbent ***680** Justices as to their eligibility for office, even though they are not attorneys.

‘J. B. Cooke

‘State Assemblyman 37th Dist.’

Had it been passed, it would have been presumed to have been passed with full knowledge of the Attorney General’s opinion ([Coca-Cola Co. v. State Board of Equalization \[1945\], 25 Cal.2d 918 \[156 P.2d 1\]](#)) and it would have been presumed to have changed the law, rather than to have ‘clarified’ it.

[Loew's, Inc., v. Byram \(1938\), 11 Cal.2d 746 \[82 P.2d 1\]](#). Having failed of passage, there is a presumption that the provision means what the Attorney General said it means. The interpretation by the Attorney General is the same as this Court has reached independently.

‘Plaintiff’s only possible hope is that the Court will, as he urges it to do, ‘attach separate meanings to the two uses of the term ‘existing.’” In other words, plaintiff says that ‘existing court’ means the Justice’s Court of Ventura Township in the first part of the sentence and means the Justice Court of Ventura Judicial District in the second part of the sentence. This construction is not reasonable because a word or clause in a statute is presumed to have the same meaning throughout. [Pitte v. Shipley \(1873\), 46 Cal. 154](#); [Hoag v. Howard \(1880\), 55 Cal. 564](#). Even if reasonable, that construction would be extremely broad and exceptions are to be narrowly, not broadly, construed. City of [National City v. Fritz \(1949\), 33 Cal.2d 635 \[204 P.2d 7\]](#).

‘Plaintiff, as an elective officer, must be retired ‘at the end of the first term to which he is elected and which commences on a date following his seventieth birthday.’ [Gov. Code, Sec. 31671](#). His term of office will end, by operation of law, when a Municipal Court is established. ‘In each district containing a population of more than 40,000 inhabitants * * * there shall be a municipal court.’ [Constitution, Article VI, Section 11](#). ‘Whenever a municipal court is established in a district

in which a justice court was previously established * * *, the justice court shall cease to exist. * * *’ [Government Code, Section 71084](#). A ‘vacancy in the office of judge of a municipal court shall be filled by appointment by the Governor. * * *’ [Government Code, Section 71180](#). (If plaintiff were eligible, he would automatically become Judge of the Municipal Court. If two or more incumbent judges were eligible to one position of Judge of the Municipal Court, the court would not begin to function until January, 1959 following *681 the election of a judge in 1958. [Gov. Code, Secs. 71080, 71081](#). Neither of these situations exists in this case.) Since the necessary legislation exists for a Municipal Court in the Ventura Judicial District ([Gov. Code, Secs. 74880–74887](#)), the court will come into existence when it is found, pursuant to [Section 71043\(c\) of the Government Code](#), that there are 40,000 inhabitants of the district. At that moment plaintiff will be compulsorily retired and will be entitled to retirement benefits under the County Employees Retirement Law of 1937.’

The judgment is affirmed.

WHITE, P. J., and DORAN, J., concur.

All Citations

150 Cal.App.2d 671, 310 P.2d 673

7 Cal.App.5th 628

Court of Appeal, Third District, California.

DEPARTMENT OF ALCOHOLIC
BEVERAGE CONTROL, Petitioner,

v.

ALCOHOLIC BEVERAGE CONTROL

APPEALS BOARD, Respondent;

Garfield Beach CVS, LLC et al., Real Parties in Interest.

C078574

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Filed 1/17/2017

Synopsis

Background: Department of Alcoholic Beverage Control appealed decision of the Alcoholic Beverage Control Appeals Board, No. AB9434, which reversed suspension of store's off-sale general license for selling alcohol to a minor decoy.

Holdings: The Court of Appeal, [Hoch](#), J., held that:

Alcoholic Beverage Control rule which required that minor decoys “truthfully answer any questions about his or her age,” did not require minor decoy to truthfully respond to clerk's statement, after looking at driver's license, that “I would not have guessed it, you must get asked a lot,” as rule only required decoys to answer questions, and

rule did not impose affirmative duty on minor decoy to speak up in order to clarify any mistake regarding age articulated by sales clerk.

Annulled; reinstated and remanded.

****132 ORIGINAL PROCEEDING:** Petition for writ of review. Petition granted. Alcoholic Beverage Control Appeals Board No. AB9434.

Attorneys and Law Firms

[Kamala D. Harris](#), Attorney General, [Alicia M.B. Fowler](#), Assistant Attorney General, [Peter D. Halloran](#) and Lauren Sible, Deputy Attorneys General for Petitioner.

[Linda A. Mathes](#), [Sarah M. Smith](#), John D. Ziegler for Respondent Alcoholic Beverage Control Appeals Board.

****133** [Solomon](#), [Saltsman & Jamieson](#), [Stephen Warren Solomon](#), [Ralph Barat Saltsman](#), [Stephen Allen Jamieson](#), [R. Bruce Evans](#), [Ryan M. Kroll](#), [Jennifer L. Oden](#), Los Angeles, and [Margaret Warner Rose](#) for Real Parties in Interest.

Opinion

[HOCH](#), J.

***630** [California Constitution, article XX, section 22](#), prohibits the sale of alcoholic beverages to persons under 21 years of age. (See also [Bus. & Prof. Code, § 25658, subd. \(a\)](#)),¹ [making it a misdemeanor to sell alcohol to a person under 21 years of age]. Here, the Department of Alcoholic Beverage ***631** Control (Department) issued a 15-day suspension of an off-sale general license held by the Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174 (CVS) after an administrative law judge found the store clerk sold alcohol to a minor decoy.² The Alcoholic Beverage Control Appeals Board (Appeals Board) reversed the suspension based on [California Code of Regulations, title 4, section 141](#) (Rule 141), which allows a law enforcement agency to use an underage decoy only “in a ‘fashion that promotes fairness.’ (*Id.*, subd. (a).) In the Appeals Board's view, the suspension was unfair because the minor decoy did not respond about his age when the store clerk looked at his driver license and remarked, “I would never have guessed it, you must get asked a lot.” To challenge the reversal of the license suspension, the Department petitioned for a writ of review in this court. (§ 23090.)

The Department contends it correctly interprets Rule 141 to require minor decoys to answer only questions about their ages. Based on the administrative law judge's finding in this case that the store clerk's remark constituted a statement rather than a question, the Department argues its decision was legally correct and supported by substantial evidence. The Appeals Board counters Rule 141 is ambiguous and results “in confusion and manifest unfairness.” CVS argues the Department's interpretation of Rule 141 unfairly allows decoys to remain silent in the face of mistaken statements about age. According to CVS, affirming the license suspension would allow deceptive and misleading silence in the face of a store clerk's explicit mistake about the minor decoy's age.

We conclude Rule 141 is not ambiguous in requiring minor decoys to answer truthfully only questions about their ages. Because substantial evidence supports the administrative law judge's factual finding the decoy in this case was not questioned about his age, we determine as a matter of law that Rule 141 does not provide CVS with a defense to the accusation it sold an alcoholic beverage to an underage buyer. Accordingly, we annul the Appeals Board's decision.

BACKGROUND

The Department's Imposition of a 15-day License Suspension

In October 2013, the Department accused CVS of selling alcohol to an underage person at its Garfield Beach store. An administrative hearing was *632 held in February 2014, in which the administrative law judge made the following findings of fact:

CVS has held an off-sale general license to sell alcohol since June 2009, with no prior record of discipline by the Department. On June 3, 2013, Joseph Childers was 18 years old and had the appearance and mannerisms of a person under the age of 21. On that date, Childers accompanied **134 Department agents and law enforcement officers to conduct an alcoholic beverage decoy operation at the Garfield Beach CVS store. Childers entered the store at 2:30 p.m., went to the beer cooler where he selected a 24-ounce bottle of beer, and took the beer to the checkout line. The CVS store clerk scanned the bottle of beer and asked Childers for identification. Childers handed his California driver license to the clerk. The driver license indicated Childers's date of birth and had a red stripe with white letters that stated, "AGE 21 IN 2015." In addition, the driver license had a blue stripe with white letters that stated, "PROVISIONAL UNTIL AGE 18 IN 2012."

The administrative law judge made the following factual findings: "The clerk looked at Childers's [driver license], tried to scan it, and looked at the [license] again. She then stated, 'I would never have guessed it, you must get asked a lot,' or words to that effect. The clerk's remark was framed as a statement not a question. The decoy did not say anything to the clerk in response to her remark. He thought the clerk's statement was 'casual conversation.' The decoy also testified the statement might or might not have been related to his age.

Thus, in his mind it was unclear what the clerk meant by her statement. [¶] The clerk sold Childers the 24-ounce bottle of Corona beer. At no time during the transaction did the clerk ask Childers how old he was or his age. Following the sale of the beer, the decoy exited the premises." The administrative law judge found Childers's testimony at the hearing to be clear, concise, and credible. On this basis, the administrative law judge decided there was cause to suspend CVS's off-sale general license for 15 days.

In April 2014, the Department adopted the administrative law judge's proposed decision as its decision in this case. CVS appealed the decision to the Appeals Board.

The Appeals Board's Reversal of License Suspension

In January 2015, the Appeals Board issued its decision. The Appeals Board's decision relied upon its prior decision to conclude Rule 141 required the decoy to respond to the store clerk's statement upon looking at his driver license. The Appeals Board's decision emphasized the following testimony by the decoy at the administrative hearing:

*633 "[Counsel for CVS]: [A]fter the clerk made that statement to you, what did you take that statement to mean?"

"A. [Childers]: Casual conversation.

"Q. And [in] that casual conversation did you see it related in any way to your age?"

"A. Yes and no.

"Q. When you say 'Yes and no,' what do you mean?"

"A. Yes, that maybe *I looked younger*. No, because she *thought I was older* or thought that I do it a lot, you know."

The Appeals Board reasoned that "[w]hen the decoy believes, as here, that a clerk's remarks are ambiguous as to his or her age, the decoy has an obligation to respond verbally and truthfully. That is the plain meaning of rule 141(a)'s language instructing that minor decoy operations must be conducted in a 'fashion that promotes fairness.'" (Italics omitted.) The Appeals Board further stated that whenever "the decoy him or herself interprets a seller's comments to *in any way* pertain to the decoy's age, the Department should insist that decoy err on the side of responding with clarification." On these grounds,

the Appeals Board reversed the Department's decision and rescinded the **135 suspension of CVS's off-sale general license.

Petition for Writ of Review

In February 2015, the Department filed in this court a petition for writ of review from the decision of the Appeals Board. We issued a writ of review in March 2015. (§ 23090.)

DISCUSSION

I

Standard of Review

In addition to prohibiting the sale of alcohol to minors, the California Constitution “vests the Department with broad discretion to revoke or suspend liquor licenses ‘for good cause’ if continuing the license would be ‘contrary to public welfare or morals.’ (Cal. Const., art. XX, § 22.) In the *634 absence of a clear abuse of discretion, the courts will uphold the Department's decision to suspend a license for violation of the liquor laws. (E.g., *Martin v. Alcoholic Bev. etc. Appeals Bd.* (1959) 52 Cal.2d 238, 248–249 [340 P.2d 1].)” (*Provigo Corp. v. Alcoholic Beverage Control Appeals Bd.* (1994) 7 Cal.4th 561, 566, 28 Cal.Rptr.2d 638, 869 P.2d 1163 (*Provigo*)). “ ‘The administration of the Alcoholic Beverage Control Act, within the scope of the purposes of that act, is initially vested in the department. Its decisions, however, are subject to administrative review by the board and a final order of the board is, in turn, subject to judicial review.’ ” (*Caressa Camille, Inc. v. Alcoholic Beverage Control Appeals Bd.* (2002) 99 Cal.App.4th 1094, 1099, 121 Cal.Rptr.2d 758, quoting *Walsh v. Kirby* (1974) 13 Cal.3d 95, 102, 118 Cal.Rptr. 1, 529 P.2d 33.)

The scope of review of the Department's decisions is the same in the Appeals Board and this court. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2002) 100 Cal.App.4th 1066, 1071, 123 Cal.Rptr.2d 278 (*Deleuze*)). Section 23090.2 provides that review “shall not extend further than to determine, based on the whole record of the department as certified by the board, whether: [¶] (a) The department has proceeded without or in excess of its jurisdiction. [¶] (b) The department has proceeded in the

manner required by law. [¶] (c) The decision of the department is supported by the findings. [¶] (d) The findings in the department's decision are supported by substantial evidence in the light of the whole record. [¶] (e) There is relevant evidence which, in the exercise of reasonable diligence, could not have been produced or which was improperly excluded at the hearing before the department.” Section 23090.2 also excludes the power to make findings of fact from the scope of review. (*Ibid.*)

In conducting our review, “ ‘[w]e defer to the Department's interpretation of its own rules, since the agency is likely to be intimately familiar with regulations it authored and sensitive to the practical implications of one interpretation over another.’ (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 12 [78 Cal.Rptr.2d 1, 960 P.2d 1031], (*Yamaha Corp.*)). Courts generally will not depart from the Department's contemporaneous construction of a rule enforced by the Department unless such interpretation is clearly erroneous or unauthorized. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2003) 109 Cal.App.4th 1687, 1696 [1 Cal.Rptr.3d 339])” (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2005) 128 Cal.App.4th 1195, 1205, 27 Cal.Rptr.3d 766.) In short, the Department's decisions are **136 “subject to review only for insufficiency of the evidence, excess of jurisdiction, errors of law, or abuse of discretion.” (*Deleuze*, at p. 1072, 123 Cal.Rptr.2d 278.)

*635 II

Rule 141

The Department contends it correctly rejected CVS's reliance on Rule 141 as providing a defense to its sale of alcohol to the underage decoy in this case. We agree.

A.

The Department's Reliance on Minor Decoys

The Department relies on minor decoy operations as an integral part of its enforcement of the constitutional and statutory prohibitions on sales of alcohol to persons under 21 years of age. (Cal. Const., art. XX, § 22; § 25658, subd. (a).) The California Supreme Court has approved

of the practice, noting that “[t]he use of underage decoys to enforce laws against unlawful sales to minors clearly *promotes* rather than hinders” the California constitutional and statutory prohibitions on sales of [alcoholic beverages to minors](#). (*Provigo, supra*, 7 Cal.4th at p. 567, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

The Business and Professions Code provides that “[p]ersons under 21 years of age may be used by peace officers in the enforcement of this section to apprehend licensees, or employees or agents of licensees, or other persons who sell or furnish alcoholic beverages to minors.” (§ 25658, [subd. \(f\)](#).) In pertinent part, [subdivision \(f\) of section 25658](#) further provides: “Guidelines with respect to the use of persons under 21 years of age as decoys shall be adopted and published by the department in accordance with the rulemaking portion of the Administrative Procedure Act” To comply with [subdivision \(f\) of section 25658](#), the Department promulgated Rule 141. (*Acapulco Restaurants, Inc. v. Alcoholic Beverage Control Appeals Bd.* (1998) 67 Cal.App.4th 575, 579, 79 Cal.Rptr.2d 126 (*Acapulco Restaurants*)). In its entirety, Rule 141 states:

“(a) A law enforcement agency may only use a person under the age of 21 years to attempt to purchase alcoholic beverages to apprehend licensees, or employees or agents of licensees who sell alcoholic beverages to minors (persons under the age of 21) and to reduce sales of alcoholic beverages to minors in a fashion that promotes fairness.

“(b) The following minimum standards shall apply to actions filed pursuant to [Business and Professions Code Section 25658](#) in which it is alleged that a minor decoy has purchased an alcoholic beverage: [¶] (1) At the time of the operation, the decoy shall be less than 20 years of age; [¶] (2) The decoy *636 shall display the appearance which could generally be expected of a person under 21 years of age, under the actual circumstances presented to the seller of alcoholic beverages at the time of the alleged offense; [¶] (3) A decoy shall either carry his or her own identification showing the decoy's correct date of birth or shall carry no identification; a decoy who carries identification shall present it upon request to any seller of alcoholic beverages; [¶] (4) A decoy shall answer truthfully any questions about his or her age; [¶] (5) Following any completed sale, but not later than the time a citation, if any, is issued, the peace officer directing the decoy shall make a reasonable attempt to enter the licensed premises and have the minor decoy who purchased alcoholic beverages make a

face to face identification of the alleged seller of the alcoholic beverages.

**137 “(c) Failure to comply with this rule shall be a defense to any action brought pursuant to [Business and Professions Code Section 25658](#).” (Italics added.)

B.

Availability of the Rule 141 Defense

The Appeals Board contends subdivision (b)(4) of Rule 141 required the minor decoy in this case to truthfully respond to the clerk's statement, “I would never have guessed it, you must get asked a lot.” Similarly, CVS argues the minor decoy's lack of response violated Rule 141 and provided a defense to the Department's accusation. The Department counters by noting the administrative law judge made the factual finding that the CVS clerk's words to the minor decoy constituted a statement rather than a question. On this basis, the Department argues the defense supplied by Rule 141 does not apply here. Resolving these contentions requires us to construe the meaning of Rule 141.

As this court has previously explained, “Generally, the same rules governing the construction and interpretation of statutes apply to the construction and interpretation of administrative regulations. (*In re Richards* (1993) 16 Cal.App.4th 93, 97–98, 19 Cal.Rptr.2d 797.) Accordingly, ‘we begin with the fundamental rule that a court should ascertain the intent of the Legislature so as to effectuate the purpose of the law.’ [Citations.] ‘An equally basic rule of statutory construction is, however, that courts are bound to give effect to statutes according to the usual, ordinary import of the language employed in framing them.’ [Citations.] Although a court may properly rely on extrinsic aids, it should first turn to the words of the statute to determine the intent of the Legislature. [Citations.] ‘If the words of the statute are clear, the court should not add to or alter them to accomplish a *637 purpose that does not appear on the face of the statute or from its legislative history.’ (*California Teachers Assn. v. San Diego Community College Dist.* (1981) 28 Cal.3d 692, 698 [170 Cal.Rptr. 817, 621 P.2d 856].)” (*Schmidt v. Foundation Health* (1995) 35 Cal.App.4th 1702, 1710–1711, 42 Cal.Rptr.2d 172.) “ ‘The construction of an administrative regulation and its application to a given set of facts are matters of law.’ ” (*Ibid.*, quoting *Auchmoody v. 911 Emergency Services* (1989) 214 Cal.App.3d 1510, 1517, 263 Cal.Rptr. 278.)

In enacting the Alcoholic Beverage Control Act (Act) (§ 23000 et seq.), the Legislature declared the Act “involves in the highest degree the economic, social, and moral well-being and the safety of the State and of all its people.” (§ 23001.) The Act establishes the Department “to provide a governmental organization which will ensure a strict, honest, impartial, and uniform administration and enforcement of the liquor laws throughout the State.” (§ 23049.) To that end, section 23001 declares that “[a]ll provisions of this division shall be liberally construed for the accomplishment of these purposes.”

Rule 141, subdivision (b)(4) provides that “[a] decoy shall answer truthfully any questions about his or her age.” The Rule’s guidance is clear and unambiguous. Minor decoys do not need to respond to *statements* of any kind nor do they need to respond truthfully to *questions* other than those concerning their ages. Thus, Rule 141 does not require minor decoys to correct mistakes articulated by licensed alcohol sellers. Instead, the minor decoys need to respond truthfully only to questions about their ages. In short, Rule 141 sets forth clear, unambiguous, and fair guidance for minor decoys to follow during the Department’s operations. Consequently, the Department properly construed the ****138** plain language of Rule 141 in determining the minor decoy in this case was not required to respond to the clerk’s statement that might have related to the decoy’s age.

The Appeals Board disagrees with the Department’s plain-meaning interpretation of Rule 141, asserting the Rule is ambiguous and unfair. The Appeals Board argues that “the language of Rule 141[(b)(4)] is ambiguous, and decoys lack the expertise to make a fair decision about whether a clerk’s words are a ‘question’ ‘about his or her age.’ ” The Appeals Board bases its argument on the assertion that “[t]he word ‘question’ is, especially when uttered vocally as opposed to being written, not free from doubt.” In support, the Appeals Board argues the ambiguity of the word “question” is demonstrated by the need for an evidentiary hearing to determine the nature of the store clerk’s communication to the minor decoy. We reject the argument.

Courts have long resolved factual issues concerning whether a spoken communication constitutes a question that invited an answer. In ***638** *Rhode Island v. Innis* (1980) 446 U.S. 291, 100 S.Ct. 1682, 64 L.Ed.2d 297, the United States Supreme Court articulated a test for determining when *Miranda* advisements must be given to a suspect

that “come[s] into play whenever a person in custody is subjected to either express questioning or its functional equivalent.” (*Id.* at pp. 300–301, 100 S.Ct. 1682.) The test under *Rhode Island v. Innis* requires that police officers understand not only whether they are engaging in “express questioning,” but also when their words or actions “are reasonably likely to elicit an incriminating response from the suspect.” (*Id.* at p. 301, 100 S.Ct. 1682. fn. omitted.) The United States Supreme Court’s decision establishes the unproblematic nature of distinguishing between oral communications constituting questions (and even their functional equivalents) and statements not reasonably likely to elicit an incriminating answer. Courts even require law enforcement officers to distinguish between suggestive and nonsuggestive questions. (*People v. Saracoglu* (2007) 152 Cal.App.4th 1584, 1590, 62 Cal.Rptr.3d 418.) Here, the determination required of minor decoys is more clear than the *Rhode Island v. Innis* test or the distinction between suggestive and nonsuggestive questions because subdivision (b)(4) of Rule 141 applies *only* to questions relating to age. “Question” is not an ambiguous term and does not lead to confusion in limiting spoken communications to those involving inquiries that contemplate answers.

We also reject the Appeals Board’s contention Rule 141 is ambiguous because “no definition is provided as to what ‘fairness’ means or how it is to be determined.” The lack of a definition of fairness, by itself, does not render Rule 141 ambiguous. (Cf. *Nava v. Mercury Cas. Co.* (2004) 118 Cal.App.4th 803, 805, 13 Cal.Rptr.3d 816 [lack of definition does not render a term ambiguous].) Contrary to the Appeals Board’s contention, Rule 141 provides specific guidance regarding how to preserve fairness in minor decoy operations. Subdivision (b) of Rule 141 implements the goal of fairness by imposing five specific requirements for every minor decoy operation. Decoys must be under the age of 20; have the appearance of a person under 21; carry their own actual identification and present that identification upon request; truthfully answer any questions about their ages; and make face-to-face identifications of the persons who sold the alcoholic beverages. (Rule 141, subd. (b)(1)-(5).) Fairness under Rule 141 is assured by a set of five expressly defined safeguards, all of which must be fulfilled during a minor decoy operation. ****139** (*Acapulco Restaurants, supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.) Consequently, Rule 141’s use of the word “fairness” does not render the rule ambiguous or confusing.

In support of the Appeals Board's argument Rule 141 is ambiguous regarding what constitutes fairness, it points to its earlier decisions in *7-Eleven, Inc. & Johal Stores, Inc.* (Oct. 1, 2014) AB-9403 (*7-Eleven*), *Equilon Enterprises, LLC* (July 26, 2002) AB-7845 (*Equilon*), *Lucky Stores, Inc.* (Oct. 13, 1999) AB-7227 (*Lucky*), *Southland Corp. & Dandona* (Apr. *639 16, 1999) AB-7099 (*Southland*), and *Thrifty Payless, Inc.* (Dec. 30, 1998) AB-7050 (*Thrifty*). We may take judicial notice of decisions of the Appeals Board. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2005) 128 Cal.App.4th 1195, 1208, fn. 5, 27 Cal.Rptr.3d 766; accord *Reimel v. Alcoholic Beverage Control Appeals Bd.* (1967) 254 Cal.App.2d 340, 62 Cal.Rptr. 54.) Thus, although we are not bound by the Appeals Board's decisions, we take judicial notice of the cited decisions and consider their reasoning for persuasive value.

Regarding agency decisions, the California Supreme Court has noted that “[w]here the meaning and legal effect of a statute is the issue, an agency's interpretation is one among several tools available to the court. Depending on the context, it may be helpful, enlightening, even convincing. It may sometimes be of little worth. [Citation.] Considered alone and apart from the context and circumstances that produce them, agency interpretations are not binding or necessarily even authoritative.” (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 7-8, 78 Cal.Rptr.2d 1, 960 P.2d 1031.) Based on our review, we conclude the Appeals Board's cited decisions vary in their persuasiveness and fidelity to Rule 141.

In *7-Eleven, supra*, AB-9403, the Appeals Board affirmed the suspension of an off-sale license based on sale to a minor decoy after the store clerk looked at the minor decoy's identification and stated, “oh, you are so young.” (*7-Eleven*, at pp. 2, 14.) In affirming the suspension, the Appeals Board concluded the minor decoy was not required to respond because the store clerk did not ask a question or indicate a mistake as to the minor decoy's age. The Appeals Board reasoned that “[t]he wor[d] ‘young’ is a subjective term, and gives no indication that the clerk has made a miscalculation and as a result believes the decoy to be over 21” years of age. (*Id.* at p. 12.) Under the reasoning of *7-Eleven*, the Appeals Board should have affirmed the license suspension in this case as well. Here, the administrative law judge found the store clerk did not ask a question of the minor decoy. And the store clerk did not clearly demonstrate confusion as to the minor's age in the statement, “I would never have guessed it, you must get asked a lot.” The minor decoy testified he thought

the statement might mean either that “she thought I was older or thought that I do it a lot” (Italics added.) Because the store clerk in this case made a statement akin to that in *7-Eleven*, the reasoning employed in *7-Eleven* should have led the Appeals Board to affirm the Department's decision.

We reject the reasoning contained in the remainder of the Appeals Board's earlier decisions because the reasoning in each would require minor decoys to speak up to clarify any mistake about their ages even in the absence of a question. (*Equilon, supra*, AB-7845, at p. 2 [concluding Rule 141 “was *640 violated when the decoy failed to respond to a statement by the clerk which implied that she was 21 years of age or older”], *Lucky, supra*, AB-7227, at p. 4 [same where minor decoy did not respond to mistaken statement, “1978. You are 21”], and *Southland, supra*, AB-7099, at pp. 6, 7 [same where decoy did not respond to statement, “You are 21”].) In each of these decisions, **140 the Appeals Board relied on the notion of fairness to craft a new requirement for Rule 141, namely the obligation of a minor decoy to respond to any indication of mistake regarding age even in the absence of a question. Rule 141, however, expressly requires minor decoys only to answer questions relating to their ages. (Rule 141, subd. (b)(4).) The Appeals Board lacks the power to add a new defense to Rule 141.

The Appeals Board's decision in *Thrifty, supra*, AB-7050 involved a reversal of the Board's decision based on the minor decoy's silent tendering of a driver license rather than answering the clerk's question about her age. (See *Thrifty*, at p. 6 [speculating about the minor decoy's motivation in offering her identification rather than answering about her age].) Unlike this case, *Thrifty* involved an actual question by the clerk about the minor decoy's age and is therefore inapposite in this case where the administrative law judge determined the clerk did not ask any questions. (*Id.* at pp. 5-6.) Consequently, we need not consider whether *Thrifty* was correctly decided in harmony with Rule 141.

Ultimately, we are not persuaded by the Appeals Board's prior decisions that Rule 141 is ambiguous in requiring decoys to answer truthfully only questions relating to their ages.

Next, the Appeals Board argues the principle of fairness upon which Rule 141 is founded imposes an affirmative duty on minor decoys to speak up in order to clarify any mistake regarding age articulated by the vendor. If the Department had wanted to provide license holders with a defense for mistakes about a minor decoy's age or based on a minor decoy's failure

to respond to a statement by the clerk, the Department could have done so by including express language to that effect in Rule 141. However, as we explained above, the language of Rule 141 requires minor decoys to respond only to questions about their ages. We reject the Appeals Board's attempt to add a new defense to Rule 141 that is not expressed in the rule. (*Acapulco Restaurants, supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

Acapulco Restaurants involved a minor decoy operation in which the Department did not comply with Rule 141's requirement the minor decoy make a face-to-face identification of the clerk who sold the alcoholic beverage. (*Acapulco Restaurants, supra*, 67 Cal.App.4th at p. 577, 79 Cal.Rptr.2d 126; see also Rule 141, subd. (b)(5).) Despite the failure to follow this express requirement *641 of Rule 141, the Department imposed and the Appeals Board affirmed a 15-day license suspension on grounds a law enforcement officer witnessed the entire transaction. (*Acapulco Restaurants, at p. 577, 79 Cal.Rptr.2d 126*.) However, the *Acapulco Restaurants* court reversed, explaining, “[t]o ignore a rule and the defense that arises from law enforcement's failure to comply with that rule is not a matter of ‘interpretation.’ What the Department has done is to unilaterally decide that rule 141 [](b)(5) applies in some situations but not others, a decision that exceeds the Department's power. By its refusal to apply rule 141 [](b)(5) when a police officer is present at the time of the sale, the Department has crossed the line separating the interpretation of a word or phrase on one side to the legislation of a different rule on the other, thereby substituting its judgment for that of the rulemaking authority. It might as well have said that rule 141 [](b)(5) applies on Mondays but not Thursdays.” (*Acapulco Restaurants, supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

The result in *Acapulco Restaurants* followed the well-established rule that “[a]n exception to a statute is to be narrowly construed. (Citation.) When a statute specifies an exception, no others **141 may be added under the guise of judicial construction. (Citations.)” (*Kirby v. Alcoholic Beverage Control Appeals Bd.* (1968) 267 Cal.App.2d 895, 898, 73 Cal.Rptr. 352, quoting *Lacabanne Properties, Inc. v. Department of Alcoholic Beverage Control* (1968) 261 Cal.App.2d 181, 189, 67 Cal.Rptr. 734.) Fairness does not require the new exception to be judicially grafted into Rule 141 to provide additional defenses that require a minor decoy to speak up in the absence of a question by the store clerk. As the California Supreme Court has noted,

“licensees have a ready means of protecting themselves from liability by simply asking any purchasers who could possibly be minors to produce bona fide evidence of their age and identity.” (*Provigo, supra*, 7 Cal.4th at p. 570, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

Likewise, we reject the argument made by CVS that the minor decoy's silence in response the clerk's statement about his youthful appearance was “deceptive and misleading.” As this court has previously noted in a case involving a claim a governmental agency engaged in fraudulent concealment, “Courts uniformly distinguish between the misleading half-truth, or partial disclosure, and the case in which defendant says nothing at all. The general rule is that silence alone is not actionable.” (*Wiechmann Engineers v. State of California ex rel. Dept. Pub. Wks.* (1973) 31 Cal.App.3d 741, 751, 107 Cal.Rptr. 529.)

Here, the minor decoy did not say anything untrue. To the contrary, the minor decoy presented accurate information in the form of his driver license. Thus, the minor decoy did not engage in deceptive and misleading communication with the clerk. Notably, the California Supreme Court has rejected a claim the use of a “mature-looking” decoy constitutes an unfair practice by *642 the Department in a case in which a minor decoy “simply bought beer and wine, without attempting to pressure or encourage the sales in any way.” (*Provigo, supra*, 7 Cal.4th at p. 569, 28 Cal.Rptr.2d 638, 869 P.2d 1163, italics added.) The same reason applies here. The minor decoy's silence in this case did not involve any attempt to pressure or encourage the sale of an alcoholic beverage to him. The minor decoy's silence did not render the Department's operation unfair.

CVS's argument its clerk was deceived and misled by the minor decoy in this case is based on the same premise as that advanced by the Appeals Board, namely a minor decoy has a duty to speak up in response to a statement indicating a mistaken calculation of age. However, as we have explained, Rule 141 does not supply a defense based on a minor decoy's failure to respond to statements made by the clerk. Consequently, we conclude the Department properly rejected CVS's argument the minor decoy's silence rendered the operation unfair under Rule 141.

C.

Substantial Evidence Supports the Department's Decision

As part of its argument Rule 141 is ambiguous, the Appeals Board asserts the minor decoy's testimony during the hearing was equally uncertain. Specifically, the Appeals Board asserts that “[t]he decoy's testimony is as ambiguous as [Rule 141], and certainly does not support the conclusion, reached by the Department, that the clerk's words were ‘[i]ndisputably a statement’ falling outside the Rule.” In light of the administrative law judge's factual finding, we disagree.

Viewed in the light most favorable to the Department's decision, we conclude substantial evidence supports the administrative law judge's decision. As the administrative law judge found, the minor decoy's ****142** testimony was clear and credible. The administrative law judge also expressly found the testimony established the store clerk's communication to the minor decoy was a statement and not a question. Under section 23090.2, the Appeals Board lacks power to disregard the Department's factual findings, which includes findings made by the administrative law judge. (*Hasselbach v. Department of Alcoholic Beverage Control* (1959) 167 Cal.App.2d 662, 667, 334 P.2d 1058 [“The statement made in the opinion of the appeals board

was not a finding of fact for that board is without power to make findings of fact”].) Accordingly, we reject the Appeals Board's argument the store clerk's statement might have been a question instead of a statement.

***643 DISPOSITION**

The decision of the Alcohol Beverage Control Appeals Board is annulled. The decision of the Department of Alcoholic Beverage Control is reinstated and the case is remanded to the Alcohol Beverage Control Appeals Board for further proceedings consistent with this opinion.

We concur:

[BLEASE](#), Acting P.J.

[RENNER](#), J.

All Citations

7 Cal.App.5th 628, 213 Cal.Rptr.3d 130, 17 Cal. Daily Op. Serv. 384, 2017 Daily Journal D.A.R. 402

Footnotes

- 1 Undesignated statutory references are to the Business and Professions Code.
- 2 The license is held by Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174.

98 Cal.App.4th 1351

Court of Appeal, Sixth District, California.

HOWARD JARVIS TAXPAYERS

ASSOCIATION et al., Plaintiffs and Appellants,

v.

CITY OF SALINAS et al., Defendants and Respondents.

No. H022665.

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June 3, 2002.

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Rehearing Denied July 2, 2002.

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Review Denied Aug. 28, 2002.

Synopsis

Taxpayers challenged a storm drainage fee imposed by the **city**. The Superior Court, Monterey County, No. M45873, Richard M. Silver, J., entered judgment in favor of **city**. **Taxpayers** appealed. The Court of Appeal, **Elia**, J., held that: (1) fee was a property-related fee requiring voter approval, and (2) fee was not a “fee related to sewer and water services,” and thus did not fall into the exception to the voter-approval requirements for new taxes.

Reversed.

Procedural Posture(s): On Appeal.

Attorneys and Law Firms

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Opinion

[ELIA](#), J.

In this “reverse validation” action, plaintiff **taxpayers** challenged a storm drainage fee imposed by the **City** of **Salinas**. Plaintiffs contended that the fee was a “property-related” fee requiring voter approval, pursuant to **California Constitution, article XIII D, section 6(c)**, which was added by the passage of Proposition 218. The trial court ruled that

the fee did not violate this provision because (1) it was not a property-related fee ***1353** and (2) it met the exemption for fees for sewer and water services. We disagree with the trial court's conclusion and therefore reverse the order.

Background

In an effort to comply with the 1987 amendments to the federal Clean Water Act ([33 U.S.C. § 1251, et seq.](#), [40 C.F.R. § 122.26\(a\)](#) et seq.), the **Salinas City** Council took measures to reduce or eliminate pollutants contained in storm water, which was channeled in a drainage system separate from the sanitary and industrial waste systems. On June 1, 1999, the **City** Council enacted two ordinances to fund and maintain the compliance program. These measures, ordinance Nos. 2350 and 2351, added former Chapters 29 and 29A, respectively, to the **Salinas City** Code. Former section 29A–3 allowed the **City** Council to adopt a resolution imposing a “Storm Water Management Utility fee” to finance the improvement of storm and surface water management facilities. The fee would be imposed on “users of the storm water drainage system.”

On July 20, 1999, the **City** Council adopted resolution No. 17019, which established rates for the storm and surface water management system. The resolution specifically states: “There is hereby imposed on each and every developed parcel of land within the **City**, and the owners and occupiers thereof, jointly and severally, a storm drainage fee.” The fee was to be paid annually to the **City** “by the owner or occupier of each and every developed parcel in the **City** who shall be presumed to be the primary utility rate payer” The amount of the fee was to be calculated according to the degree to which the property contributed runoff to the **City's** drainage facilities. That contribution, in turn, would be measured by the amount of “impervious area”¹ on that parcel.

****230** Undeveloped parcels—those that had not been altered from their natural state—were not subject to the storm drainage fee. In addition, developed parcels that maintained their own storm water management facilities or only partially contributed storm or surface water to the **City's** storm drainage facilities were required to pay in proportion to the amount they did contribute runoff or used the **City's** treatment services.

***1354** On September 15, 1999, plaintiffs filed a complaint under [Code of Civil Procedure section 863](#) to determine the validity of the fee.² Plaintiffs alleged that this was a property-

related fee that violated [article XIII D, section 6, subdivision \(c\), of the California Constitution](#) because it had not been approved by a majority vote of the affected property owners or a two-thirds vote of the residents in the affected area. The trial court, however, found this provision to be inapplicable on two grounds: (1) the fee was not “property related” and (2) it was exempt from the voter-approval requirement because it was “related to” sewer and water services.

Discussion

Article XIII D was added to the [California Constitution](#) in the November 1996 election with the passage of Proposition 218, the “Right to Vote On Taxes Act.” [Section 6 of article XIII D](#)³ requires notice of a proposed property-related fee or charge and a public hearing. If a majority of the affected owners submit written protests, the fee may not be imposed. ([§ 6, subd. \(a\)\(2\)](#).) The provision at issue is [section 6, subdivision \(c\)](#) (hereafter “[section 6\(c\)](#)”), which states, in relevant part: “Except for fees or charges for sewer, water, and refuse collection services, no property related fee or charge shall be imposed or increased unless and until that fee or charge is submitted and approved by a majority vote of the property owners of the property subject to the fee or charge or, at the option of the agency, by a two-thirds vote of the electorate residing in the affected area.”

[Section 2](#) defines a “fee” under this article as a levy imposed “upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property related service.” ([§ 2, subd. \(e\)](#).) A “property-related service” is “a public service having a direct relationship to property ownership.” ([§ 2, subd. \(h\)](#).) The [City](#) maintains that the storm drainage fee is not a property-related fee, but a “user fee” which the property owner can avoid simply by maintaining a storm water management facility on the property. Because it is possible to own property without being subject to the fee, the [City](#) argues this is not a fee imposed “as an incident of property ownership” or “for a property related service” within the meaning of [section 2](#).

We cannot agree with the [City's](#) position. Resolution No. 17019 plainly established a property-related fee for a property-related service, the management of storm water runoff from the “impervious” areas of each parcel in the [*1355 City](#). The [**231](#) resolution expressly stated that “each owner and occupier of a developed lot or parcel of real property within the [City](#), is served by the [City's](#) storm

drainage facilities” and burdens the system to a greater extent than if the property were undeveloped. Those owners and occupiers of developed property “should therefore pay for the improvement, operation and maintenance of such facilities.” Accordingly, the resolution makes the fee applicable to “*each and every developed parcel* of land within the [City](#).” (Italics added.) This is not a charge directly based on or measured by use, comparable to the metered use of water or the operation of a business, as the [City](#) suggests. (See [Apartment Assn. of Los Angeles County, Inc. v. City of Los Angeles](#) (2001) 24 [Cal.4th 830, 838, 102 Cal.Rptr.2d 719, 14 P.3d 930](#) [article XIII D inapplicable to inspection fee imposed on private landlords]; [Howard Jarvis Taxpayers Assn. v. City of Los Angeles](#) (2000) 85 [Cal.App.4th 79, 101 Cal.Rptr.2d 905](#), [water usage rates are not within the scope of article XIII D].)

The “Proportional Reduction” clause on which the [City](#) relies does not alter the nature of the fee as property related.⁴ A property owner's operation of a private storm drain system reduces the amount owed to the [City](#) to the extent that runoff into the [City's](#) system is reduced. The fee nonetheless is a fee for a public service having a direct relationship to the ownership of developed property. The [City's](#) characterization of the proportional reduction as a simple “opt-out” arrangement is misleading, as it suggests the property owner can avoid the fee altogether by declining the service. Furthermore, the reduction is not proportional to the amount of services requested or used by the occupant, but on the physical properties of the parcel. Thus, a parcel with a large “impervious area” (driveway, patio, roof) would be charged more than one consisting of mostly rain-absorbing soil. Single-family residences are assumed to contain, on average, a certain amount of impervious area and are charged \$18.66 based on that assumption.

Proposition 218 specifically stated that “[t]he provisions of this act shall be liberally construed to effectuate its purposes of limiting local government revenue and enhancing [taxpayer](#) consent.” (Proposition 218, [§ 5](#); reprinted at Historical Notes, 2A West's Ann.Cal.Const. (2002 supp.) foll. art. XIII C, p. 38 [hereafter Historical Notes].) We are obligated to construe constitutional amendments in accordance with the natural and ordinary meaning of the language used by the framers—in this case, the voters of [California](#)—in a manner that effectuates their purpose in adopting the law. ([Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization](#) (1978) 22 [Cal.3d 208, 244–245, 149 Cal.Rptr. 239, 583 P.2d 1281](#); [Arden Carmichael, Inc. v. County of Sacramento](#) (2001) 93 [Cal.App.4th 507, 514–515](#),

[113 Cal.Rptr.2d 248](#); *Board of Supervisors v. Lonergan* (1980) [27 Cal.3d 855, 863, 167 Cal.Rptr. 820, 616 P.2d *1356 802.](#)) To interpret the storm drainage fee as a use-based charge would contravene one of the stated objectives of Proposition 218 by “frustrat[ing] the purposes of voter approval for tax increases.” (Proposition 218, [§ 2.](#)) We must conclude, therefore, that the storm drainage fee “burden[s] landowners as landowners,” and is therefore subject to the voter-approval requirements of article XIII D unless an exception applies. ([**232 Apartment Assn. of Los Angeles County, Inc. v. City of Los Angeles, supra, 24 Cal.4th at p. 842, 102 Cal.Rptr.2d 719, 14 P.3d 930.](#))

Exception for “Sewer” or “Water” Service

As an alternative ground for its decision, the trial court found that the storm drainage fee was “clearly a fee related to ‘sewer’ and ‘water’ services.” The exception in section 6(c) applies to fees “for sewer, water, and refuse collection services.” Thus, the question we must next address is whether the storm drainage fee was a charge for sewer service or water service.

The parties diverge in their views as to whether the reach of [California Constitution, article XIII D, section 6\(c\)](#) extends to a storm drainage system as well as a sanitary or industrial waste sewer system. The [City](#) urges that we rely on the “commonly accepted” meaning of “sewer,” noting the broad dictionary definition of this word.⁵ The [City](#) also points to [Public Utilities Code section 230.5](#) and the [Salinas City Code](#), which describe storm drains as a type of sewer.⁶

Plaintiffs “do not disagree that storm water is carried off in storm sewers,” but they argue that we must look beyond mere definitions of “sewer” to examine the legal meaning in context. Plaintiffs note that the storm water management system here is distinct from the sanitary sewer system and the industrial waste management system. Plaintiffs’ position echoes that of the [*1357 Attorney General](#), who observed that several [California](#) statutes differentiate between management of storm drainage and sewerage systems.⁷ ([81 Ops.Cal.Atty. Gen. 104, 106 \(1998\).](#)) Relying extensively on the Attorney General’s opinion, plaintiffs urge application of a different rule of construction than the plain-meaning rule; they invoke the maxim that “if a statute on a particular subject omits a particular provision, inclusion of that provision in another related statute indicates an intent [that] the provision is not applicable to the statute from which it was omitted.” (*In re Marquis D.* (1995)

[38 Cal.App.4th 1813, 1827, 46 Cal.Rptr.2d 198.](#)) Thus, while section 5, which addresses assessment procedures, refers to exceptions specifically [**233](#) for “sewers, water, flood control, [and] drainage systems” (italics added), the exceptions listed in section 6(c) pertain only to “sewer, water, and refuse collection services.” Consequently, in plaintiffs’ view, the voters must have intended to exclude drainage systems from the list of exceptions to the voter-approval requirement.

The statutory construction principles invoked by both parties do not assist us. The maxim proffered by plaintiffs, “although useful at times, is no more than a rule of reasonable inference” and cannot control over the lawmakers’ intent. ([California Fed. Savings & Loan Assn. v. City of Los Angeles](#) (1995) [11 Cal.4th 342, 350, 45 Cal.Rptr.2d 279, 902 P.2d 297](#); [Murillo v. Fleetwood Enterprises, Inc.](#) (1998) [17 Cal.4th 985, 991, 73 Cal.Rptr.2d 682, 953 P.2d 858.](#)) On the other hand, invoking the plain-meaning rule only begs the question of whether the term “sewer services” was intended to encompass the more specific sewerage with which most voters would be expected to be familiar, or all types of systems that use sewers, including storm drainage and industrial waste. The popular, nontechnical sense of sewer service, particularly when placed next to “water” and “refuse collection” services, suggests the service familiar to most households and businesses, the sanitary sewerage system.

We conclude that the term “sewer services” is ambiguous in the context of both [section 6\(c\)](#) and Proposition 218 as a whole. We must keep in mind, however, the voters’ intent that the constitutional provision be construed liberally to curb the rise in “excessive” taxes, assessments, and fees exacted [*1358](#) by local governments without [taxpayer](#) consent. (Proposition 218, [§§ 2, 5](#); reprinted at Historical Notes, *supra*, p. 38.) Accordingly, we are compelled to resort to the principle that exceptions to a general rule of an enactment must be strictly construed, thereby giving “sewer services” its narrower, more common meaning applicable to sanitary sewerage.⁸ (Cf. *Estate of Banerjee* (1978) [21 Cal.3d 527, 540, 147 Cal.Rptr. 157, 580 P.2d 657](#); [City of Lafayette v. East Bay Mun. Utility Dist.](#) (1993) [16 Cal.App.4th 1005, 20 Cal.Rptr.2d 658.](#))

The [City](#) itself treats storm drainage differently from its other sewer systems. The stated purpose of Ordinance No. 2350 was to comply with federal law by reducing the amount of pollutants discharged into the storm water, and by preventing the discharge of “non-storm water” into the storm drainage

system, which channels storm water into state waterways. According to John Fair, the Public Works Director, the **City's** storm drainage fee was to be used not just to provide drainage service to property owners, but to monitor and control pollutants that might enter the storm water before it is discharged into natural bodies of water.⁹ The **Salinas City Code** contains requirements ****234** addressed specifically to the management of storm water runoff.¹⁰ (See, e.g., **Salinas City Code**, §§ 31–802.2, 29–15.)

For similar reasons we cannot subscribe to the **City's** suggestion that the storm drainage fee is “for ... water services.” [Government Code section 53750](#), enacted to explain some of the terms used in articles XIII C and XIII D, defines “[w]ater” as “any system of public improvements intended to provide for the production, storage, supply, treatment, or distribution of water.” (Gov.Code, § 5370, subd. (m).) The average voter would envision “water service” as the supply of water for personal, household, and commercial use, not a system or program that monitors storm water for pollutants, carries it away, and discharges it into the nearby creeks, river, and ocean.

We conclude that article XIII D required the **City** to subject the proposed storm drainage fee to a vote by the property owners or the voting residents of ***1359** the affected area. The trial court therefore erred in ruling that Ordinance Nos. 2350 and 2351 and Resolution No. 17019 were valid exercises of authority by the **City** Council.

Disposition

The judgment is reversed. Costs on appeal are awarded to plaintiffs.

WE CONCUR: [PREMO](#), Acting P.J., and [MIHARA](#), J.

All Citations

98 Cal.App.4th 1351, 121 Cal.Rptr.2d 228, 02 Cal. Daily Op. Serv. 4853, 2002 Daily Journal D.A.R. 6161

Footnotes

- [1](#) “Impervious Area,” according to resolution No. 17019, is “any part of any developed parcel of land that has been modified by the action of persons to reduce the land's natural ability to absorb and hold rainfall. This includes any hard surface area which either prevents or retards the entry of water into the soil mantle as it entered under natural conditions pre-existent to development, and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions pre-existent to development.”
- [2](#) Plaintiffs are the **Howard Jarvis Taxpayers Association**, the Monterey Peninsula **Taxpayers Association**, and two resident property owners.
- [3](#) All further unspecified section references are to article XIII D of the **California** Constitution.
- [4](#) According to the Public Works Director, proportional reductions were not anticipated to apply to a large number of people.
- [5](#) Webster's Third New International Dictionary, for example, defines “sewer” as “1: a ditch or surface drain; 2: an artificial usu. subterranean conduit to carry off water and waste matter (as surface water from rainfall, household waste from sinks or baths, or waste water from industrial works).” (Webster's 3d New Internat. Dict. (1993) p.2081.) The American Heritage Dictionary also denotes the function of “carrying off sewage or rainwater.” (American Heritage College Dict. (3d ed.1997) p. 1248.) On the other hand, the Random House Dictionary of the English Language (2d ed.1987) page 1754, does not mention storm or rain water in defining

“sewer” as “an artificial conduit, usually underground, for carrying off waste water and refuse, as in a town or **city**.”

- 6 [Public Utilities Code section 230.5](#) defines “Sewer system” to encompass all property connected with “sewage collection, treatment, or disposition for sanitary or drainage purposes, including ... all drains, conduits, and outlets for surface or storm waters, and any and all other works, property or structures necessary or convenient for the collection or disposal of sewage, industrial waste, or surface or storm waters.” **Salinas City** Code section 36–2(31) defines “storm drain” as “a sewer which carries storm and surface waters and drainage, but which excludes sewage and industrial wastes other than runoff water.”
- 7 For example, [Government Code section 63010](#) specifies “storm sewers” in delimiting the scope of “ ‘[d]rainage,’ ” while separately identifying the facilities and equipment used for “ ‘[s]ewage collection and treatment.’ ” ([Gov.Code, § 63010](#), subds.(q)(3), (q)(10).) [Government Code section 53750](#), part of the Proposition 218 Omnibus Implementation Act, explains that for purposes of articles XIII C and article XIII D “ ‘[d]rainage system’ ” means “any system of public improvements that is intended to provide for erosion control, landslide abatement, or for other types of water drainage.” [Health and Safety Code section 5471](#) sets forth government power to collect fees for “services and facilities ... in connection with its water, sanitation, storm drainage, or sewerage system.”
- 8 Sanitary sewerage carries “putrescible waste” from residences and businesses and discharges it into the sanitary sewer line for treatment by the Monterey Regional Water Pollution Control Agency. (**Salinas City** Code, § 36–2, subd. (26).)
- 9 Resolution No. 17019 defined “Storm Drainage Facilities” as “the storm and surface water sewer drainage systems comprised [*sic*] of storm water control facilities and any other natural features [that] store, control, treat and/or convey surface and storm water. The Storm Drainage Facilities shall include all natural and man-made elements used to convey storm water from the first point of impact with the surface of the earth to a suitable receiving body of water or location internal or external to the boundaries of the **City**....” The “storm drainage system” was defined to include pipes, culverts, streets and gutters, “storm water sewers,” ditches, streams, and ponds. (See also **Salinas City** Code, former § 29–3, subd. (1) [defining “storm drainage system”].)
- 10 Storm water under ordinance No. 2350 includes “storm water runoff, snowmelt runoff, and surface runoff and drainage.” (**Salinas City** Code, former § 29–3, subd. (dd).)

54 Cal.3d 326, 814 P.2d 1308, 285 Cal.Rptr. 66
Supreme Court of California

FRANCES KINLAW et al., Plaintiffs and Appellants,

v.

THE STATE OF CALIFORNIA et
al., Defendants and Respondents.

No. S014349.

Aug 30, 1991.

SUMMARY

Medically indigent adults and taxpayers brought an action pursuant to [Code Civ. Proc., § 526a](#), against the state, alleging that it had violated [Cal. Const., art. XIII B, § 6](#) (reimbursement of local governments for state-mandated new programs), by shifting its financial responsibility for the funding of health care for the poor onto the county without providing the necessary funding, and that as a result the state had evaded its constitutionally mandated spending limits. The trial court granted summary judgment for the State after concluding plaintiffs lacked standing to prosecute the action. (Superior Court of Alameda County, No. 632120-4, Henry Ramsey, Jr., and Demetrios P. Agretelis, Judges.) The Court of Appeal, First Dist., Div. Two, Nos. A041426 and A043500, reversed.

The Supreme Court reversed the judgment of the Court of Appeal, holding the administrative procedures established by the Legislature ([Gov. Code, § 17500 et seq.](#)), which are available only to local agencies and school districts directly affected by a state mandate, were the exclusive means by which the state's obligations under [Cal. Const., art. XIII B, § 6](#), were to be determined and enforced. Accordingly, the court held plaintiffs lacked standing to prosecute the action. (Opinion by Baxter, J., with Lucas, C. J., Panelli, Kennard, and Arabian, JJ., concurring. Separate dissenting opinion by Broussard, J., with Mosk, J., concurring.)

HEADNOTES

Classified to California Digest of Official Reports

(1)
State of California § 7--Actions--State-mandated Costs--Reimbursement-- Exclusive Statutory Remedy.
[Gov. Code, § 17500 et seq.](#), creates an administrative forum for resolution of state mandate claims arising under [Cal.](#)

[Const., art. XIII B, § 6](#), and establishes *327 procedures which exist for the express purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid. It also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid ([Gov. Code, § 17612](#)). In view of the comprehensive nature of the legislative scheme, and from the expressed intent, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce [Cal. Const., art. XIII B, § 6](#).

(2)

State of California § 7--Actions--State-mandated Costs--Reimbursement-- Private Action to Enforce--Standing.
In an action by medically indigent adults and taxpayers seeking to enforce [Cal. Const., art. XIII B, § 6](#), for declaratory and injunctive relief requiring the state to reimburse the county for the cost of providing health care services to medically indigent adults who, prior to 1983, had been included in the state Medi-Cal program, the Court of Appeal erred in holding that the existence of an administrative remedy ([Gov. Code, § 17500 et seq.](#)) by which affected local agencies could enforce their constitutional right under [art. XIII B, § 6](#) to reimbursement for the cost of state mandates did not bar the action. Because the right involved was given by the Constitution to local agencies and school districts, not individuals either as taxpayers or recipients of government benefits and services, the administrative remedy was adequate fully to implement the constitutional provision. The Legislature has the authority to establish procedures for the implementation of local agency rights under [art. XIII B, § 6](#); unless the exercise of a constitutional right is unduly restricted, a court must limit enforcement to the procedures established by the Legislature. Plaintiffs' interest, although pressing, was indirect and did not differ from the interest of the public at large in the financial plight of local government. Relief by way of reinstatement to Medi-Cal pending further action by the state was not a remedy available under the statute, and thus was not one which a court may award.

[See [Cal.Jur.3d, State of California, § 78](#); [7 Witkin, Summary of Cal. Law \(9th ed. 1988\) Constitutional Law, § 112](#).]

COUNSEL

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John K. Van de Kamp and Daniel E. Lungren, Attorneys General, N. Eugene Hill, Assistant Attorney General, Richard M. Frank, Asher Rubin and Carol Hunter, Deputy Attorneys General, for Defendants and Respondents.

BAXTER, J.

Plaintiffs, medically indigent adults and taxpayers, seek to enforce [section 6 of article XIII B](#) (hereafter, [section 6](#)) of the California Constitution through an action for declaratory and injunctive relief. They invoked the jurisdiction of the superior court as taxpayers pursuant to [Code of Civil Procedure section 526a](#) and as persons affected by the alleged failure of the state to comply with [section 6](#). The superior court granted summary judgment for defendants State of California and Director of the Department of Health Services, after concluding that plaintiffs lacked standing to prosecute the action. On appeal, the Court of Appeal held that plaintiffs have standing and that the action is not barred by the availability of administrative remedies.

We reverse. The administrative procedures established by the Legislature, which are available only to local agencies and school districts directly affected by a state mandate, are the exclusive means by which the state's obligations under [section 6](#) are to be determined and enforced. Plaintiffs therefore lack standing.

I State Mandates

[Section 6](#), adopted on November 6, 1979, as part of an initiative measure imposing spending limits on state and local government, also imposes on the state an obligation to reimburse local agencies for the cost of most programs and services which they must provide pursuant to a state mandate if the local agencies were not under a preexisting duty to fund the activity. It provides: *329

“Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service, except that the Legislature may, but need not, provide such subvention of funds for the following mandates:

“(a) Legislative mandates requested by the local agency affected;

“(b) Legislation defining a new crime or changing an existing definition of a crime; or

“(c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.”

A complementary provision, [section 3 of article XIII B](#), provides for a shift from the state to the local agency of a portion of the spending or “appropriation” limit of the state when responsibility for funding an activity is shifted to a local agency:

“The appropriations limit for any fiscal year ... shall be adjusted as follows: [¶] (a) In the event that the financial responsibility of providing services is transferred, in whole or in part, ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriations limit of the transferee entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount.”

II Plaintiffs' Action

The underlying issue in this action is whether the state is obligated to reimburse the County of Alameda, and shift to Alameda County a concomitant portion of the state's spending limit, for the cost of providing health care services to medically indigent adults who prior to 1983 had been included in the state Medi-Cal program. Assembly Bill No. 799 (1981-1982 Reg. Sess.) (AB 799) (Stats. 1982, ch. 328, p. 1568) removed medically indigent adults from Medi-Cal effective January 1, 1983. At the time [section 6](#) was adopted, the state was funding Medi-Cal coverage for these persons without requiring any county financial contribution.

Plaintiffs initiated this action in the Alameda County Superior Court. They sought relief on their own behalf and on behalf

of a class of similarly *330 situated medically indigent adult residents of Alameda County. The only named defendants were the State of California, the Director of the Department of Health Services, and the County of Alameda.

In the complaint for declaratory and injunctive relief, plaintiffs sought an injunction compelling the state to restore Medi-Cal eligibility to medically indigent adults or to reimburse the County of Alameda for the cost of providing health care to those persons. They also prayed for a declaration that the transfer of responsibility from the state-financed Medi-Cal program to the counties without adequate reimbursement violated the California Constitution.¹

At the time plaintiffs initiated their action neither Alameda County, nor any other county or local agency, had filed a reimbursement claim with the Commission on State Mandates (Commission).²

Whether viewed as an action seeking restoration of Medi-Cal benefits, one to compel state reimbursement of county costs, or one for declaratory relief, therefore, the action required a determination that the enactment of AB 799 created a state mandate within the contemplation of [section 6](#). Only upon resolution of that issue favorably to plaintiffs would the state have an obligation to reimburse the county for its increased expense and shift a portion of its appropriation limit, or to reinstate Medi-Cal benefits for plaintiffs and the class they seek to represent.

The gravamen of the action is, therefore, enforcement of [section 6](#).³ *331

III Enforcement of [Article XIII B, Section 6](#)

In 1984, almost five years after the adoption of [article XIII B](#), the Legislature enacted comprehensive administrative procedures for resolution of claims arising out of [section 6](#). ([§ 17500](#).) The Legislature did so because the absence of a uniform procedure had resulted in inconsistent rulings on the existence of state mandates, unnecessary litigation, reimbursement delays, and, apparently, resultant uncertainties in accommodating reimbursement requirements in the budgetary process. The necessity for the legislation was explained in [section 17500](#):

“The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state-mandated local programs has not provided for

the effective determination of the state's responsibilities under [Section 6 of Article XIII B of the California Constitution](#). The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary and, therefore, in order to relieve unnecessary congestion of the judicial system, *it is necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs.*” (Italics added.)

In part 7 of division 4 of title 2 of the Government Code, “State-Mandated Costs,” which commences with [section 17500](#), the Legislature created the Commission ([§ 17525](#)), to adjudicate disputes over the existence of a state-mandated program ([§§ 17551, 17557](#)) and to adopt procedures for submission and adjudication of reimbursement claims ([§ 17553](#)). The five-member Commission includes the Controller, the Treasurer, the Director of Finance, the Director of the Office of Planning and Research, and a public member experienced in public finance. ([§ 17525](#).)

The legislation establishes a test-claim procedure to expeditiously resolve disputes affecting multiple agencies ([§ 17554](#)),⁴ establishes the method of *332 payment of claims ([§§ 17558, 17561](#)), and creates reporting procedures which enable the Legislature to budget adequate funds to meet the expense of state mandates ([§§ 17562, 17600, 17612, subd. \(a\)](#).)

Pursuant to procedures which the Commission was authorized to establish ([§ 17553](#)), local agencies⁵ and school districts⁶ are to file claims for reimbursement of state-mandated costs with the Commission ([§§ 17551, 17560](#)), and reimbursement is to be provided only through this statutory procedure. ([§§ 17550, 17552](#).)

The first reimbursement claim filed which alleges that a state mandate has been created under a statute or executive order is treated as a “test claim.” ([§ 17521](#).) A public hearing must be held promptly on any test claim. At the hearing on a test claim or on any other reimbursement claim, evidence may be presented not only by the claimant, but also by the Department of Finance and any other department or agency potentially affected by the claim. ([§ 17553](#).) Any interested organization or individual may participate in the hearing. ([§ 17555](#).)

A local agency filing a test claim need not first expend sums to comply with the alleged state mandate, but may base its claim on estimated costs. (§ 17555.) The Commission must determine both whether a state mandate exists and, if so, the amount to be reimbursed to local agencies and school districts, adopting “parameters and guidelines” for reimbursement of any claims relating to that statute or executive order. (§ 17557.) Procedures for determining whether local agencies have achieved statutorily authorized cost savings and for offsetting these savings against reimbursements are also provided. (§ 17620 et seq.) Finally, judicial review of the Commission decision is available through petition for writ of mandate filed pursuant to [Code of Civil Procedure section 1094.5](#). (§ 17559.)

The legislative scheme is not limited to establishing the claims procedure, however. It also contemplates reporting to the Legislature and to departments and agencies of the state which have responsibilities related to funding state mandates, budget planning, and payment. The parameters and guidelines adopted by the Commission must be submitted to the Controller, who is to pay subsequent claims arising out of the mandate. (§ 17558.) Executive orders mandating costs are to be accompanied by an appropriations *333 bill to cover the costs if the costs are not included in the budget bill, and in subsequent years the costs must be included in the budget bill. (§ 17561, subs. (a) & (b).) Regular review of the costs is to be made by the Legislative Analyst, who must report to the Legislature and recommend whether the mandate should be continued. (§ 17562.) The Commission is also required to make semiannual reports to the Legislature of the number of mandates found and the estimated reimbursement cost to the state. (§ 17600.) The Legislature must then adopt a “local government claims bill.” If that bill does not include funding for a state mandate, an affected local agency or school district may seek a declaration from the superior court for the County of Sacramento that the mandate is unenforceable, and an injunction against enforcement. (§ 17612.)

Additional procedures, enacted in 1985, create a system of state-mandate apportionments to fund reimbursement. (§ 17615 et seq.)

(1) It is apparent from the comprehensive nature of this legislative scheme, and from the Legislature's expressed intent, that the exclusive remedy for a claimed violation of [section 6](#) lies in these procedures. The statutes create an administrative forum for resolution of state mandate claims, and establishes procedures which exist for the express

purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid (§ 17612).

The legislative intent is clearly stated in [section 17500](#): “It is the intent of the Legislature in enacting this part to provide for the implementation of [Section 6 of Article XIII B of the California Constitution](#) and to consolidate the procedures for reimbursement of statutes specified in the Revenue and Taxation Code with those identified in the Constitution. ...” And section 17550 states: “Reimbursement of local agencies and school districts for costs mandated by the state shall be provided pursuant to this chapter.”

Finally, section 17552 provides: “This chapter shall provide *the sole and exclusive procedure* by which a local agency or school district may claim reimbursement for costs mandated by the state as required by [Section 6 of Article XIII B of the California Constitution](#).” (Italics added.)

In short, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce [section 6](#). *334

IV Exclusivity

(2) Plaintiffs argued, and the Court of Appeal agreed, that the existence of an administrative remedy by which affected local agencies could enforce their right under [section 6](#) to reimbursement for the cost of state mandates did not bar this action because the administrative remedy is available only to local agencies and school districts.

The Court of Appeal recognized that the decision of the County of Alameda, which had not filed a claim for reimbursement at the time the complaint was filed, was a discretionary decision which plaintiffs could not challenge. (*Dunn v. Long Beach L. & W. Co.* (1896) 114 Cal. 605, 609, 610-611 [46 P. 607]; *Silver v. Watson* (1972) 26 Cal.App.3d 905, 909 [103 Cal.Rptr. 576]; *Whitson v. City of Long Beach* (1962) 200 Cal.App.2d 486, 506 [19 Cal.Rptr. 668]; *Elliott v. Superior Court* (1960) 180 Cal.App.2d 894, 897 [5 Cal.Rptr. 116].) The court concluded, however, that public policy and practical necessity required that plaintiffs have a remedy for enforcement of [section 6](#) independent of the statutory procedure.

The right involved, however, is a right given by the Constitution to local agencies, not individuals either as taxpayers or recipients of government benefits and services. [Section 6](#) provides that the “state shall provide a subvention of funds to reimburse ... local governments” (Italics added.) The administrative remedy created by the Legislature is adequate to fully implement [section 6](#). That Alameda County did not file a reimbursement claim does not establish that the enforcement remedy is inadequate. Any of the 58 counties was free to file a claim, and other counties did so. The test claim is now before the Court of Appeal. The administrative procedure has operated as intended.

The Legislature has the authority to establish procedures for the implementation of local agency rights under [section 6](#). Unless the exercise of a constitutional right is unduly restricted, the court must limit enforcement to the procedures established by the Legislature. (*People v. Western Air Lines, Inc.* (1954) 42 Cal.2d 621, 637 [268 P.2d 723]; *Chesney v. Byram* (1940) 15 Cal.2d 460, 463 [101 P.2d 1106]; *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62, 75 [222 Cal.Rptr. 750].)

Plaintiffs' argument that they must be permitted to enforce [section 6](#) as individuals because their right to adequate health care services has been compromised by the failure of the state to reimburse the county for the cost *335 of services to medically indigent adults is unpersuasive. Plaintiffs' interest, although pressing, is indirect and does not differ from the interest of the public at large in the financial plight of local government. Although the basis for the claim that the state must reimburse the county for its costs of providing the care that was formerly available to plaintiffs under Medi-Cal is that AB 799 created a state mandate, plaintiffs have no right to have any reimbursement expended for health care services of any kind. Nothing in [article XIII B](#) or other provision of law controls the county's expenditure of the funds plaintiffs claim must be paid to the county. To the contrary, section 17563 gives the local agency complete discretion in the expenditure of funds received pursuant to [section 6](#), providing: “Any funds received by a local agency or school district pursuant to the provisions of this chapter may be used for any public purpose.”

The relief plaintiffs seek in their prayer for state reimbursement of county expenses is, in the end, a reallocation of general revenues between the state and the county. Neither public policy nor practical necessity compels creation of a judicial remedy by which individuals may

enforce the right of the county to such revenues. The Legislature has established a procedure by which the county may claim any revenues to which it believes it is entitled under [section 6](#). That test-claim statute expressly provides that not only the claimant, but also “any other interested organization or individual may participate” in the hearing before the Commission (§ 17555) at which the right to reimbursement of the costs of such mandate is to be determined. Procedures for receiving any claims must “provide for presentation of evidence by the claimant, the Department of Finance and any other affected department or agency, and any other interested person.” (§ 17553. Italics added.) Neither the county nor an interested individual is without an opportunity to be heard on these questions. These procedures are both adequate and exclusive.⁷

The alternative relief plaintiffs seek—reinstatement to Medi-Cal pending further action by the state—is not a remedy available under the statute, and thus is not one which this court may award. The remedy for the failure to fund a program is a declaration that the mandate is unenforceable. That relief is available only after the Commission has determined that a mandate exists *336 and the Legislature has failed to include the cost in a local government claims bill, and only on petition by the county. (§ 17612.)⁸

Moreover, the judicial remedy approved by the Court of Appeal permits resolution of the issues raised in a state mandate claim without the participation of those officers and individuals the Legislature deems necessary to a full and fair exposition and resolution of the issues. Neither the Controller nor the Director of Finance was named a defendant in this action. The Treasurer and the Director of the Office of Planning and Research did not participate. All of these officers would have been involved in determining the question as members of the Commission, as would the public member of the Commission. The judicial procedures were not equivalent to the public hearing required on test claims before the Commission by section 17555. Therefore, other affected departments, organizations, and individuals had no opportunity to be heard.⁹

Finally, since a determination that a state mandate has been created in a judicial proceeding rather than one before the Commission does not trigger the procedures for creating parameters and guidelines for payment of claims, or for inclusion of estimated costs in the state budget, there is no source of funds available for compliance with the judicial decision other than the appropriations for the Department

of Health Services. Payment from those funds can only be at the expense of another program which the department is obligated to fund. No public policy supports, let alone requires, this result.

The superior court acted properly in dismissing this action.

The judgment of the Court of Appeal is reversed.

Lucas, C. J., Panelli, J., Kennard, J., and Arabian, J., concurred.

BROUSSARD, J.

I dissent. For nine years the Legislature has defied the mandate of article XIII B of the California Constitution (hereafter article XIII B). Having transferred responsibility for the care of medically indigent adults (MIA's) to county governments, the Legislature has failed to provide the counties with sufficient money to meet this responsibility, yet the *337 Legislature computes its own appropriations limit as if it fully funded the program. The majority, however, declines to remedy this violation because, it says, the persons most directly harmed by the violation—the medically indigent who are denied adequate health care—have no standing to raise the matter. I disagree, and will demonstrate that (1) plaintiffs have standing as citizens to seek a declaratory judgment to determine whether the state is complying with its constitutional duty under article XIII B; (2) the creation of an administrative remedy whereby counties and local districts can enforce article XIII B does not deprive the citizenry of its own independent right to enforce that provision; and (3) even if plaintiffs lacked standing, our recent decision in *Dix v. Superior Court* (1991) 53 Cal.3d 442 [279 Cal.Rptr. 834, 807 P.2d 1063] permits us to reach and resolve any significant issue decided by the Court of Appeal and fully briefed and argued here. I conclude that we should reach the merits of the appeal.

On the merits, I conclude that the state has not complied with its constitutional obligation under article XIII B. To prevent the state from avoiding the spending limits imposed by article XIII B, section 6 of that article prohibits the state from transferring previously state-financed programs to local governments without providing sufficient funds to meet those burdens. In 1982, however, the state excluded the medically indigent from its Medi-Cal program, thus shifting the responsibility for such care to the counties. Subvention funds provided by the state were inadequate to reimburse

the counties for this responsibility, and became less adequate every year. At the same time, the state continued to compute its spending limit as if it fully financed the entire program. The result is exactly what article XIII B was intended to prevent: the state enjoys a falsely inflated spending limit; the county is compelled to assume a burden it cannot afford; and the medically indigent receive inadequate health care.

I. Facts and Procedural History

Plaintiffs—citizens, taxpayers, and persons in need of medical care—allege that the state has shifted its financial responsibility for the funding of health care for MIA's to the counties without providing the necessary funding and without any agreement transferring appropriation limits, and that as a result the state is violating article XIII B. Plaintiffs further allege they and the class they claim to represent cannot, consequently, obtain adequate health care from the County of Alameda, which lacks the state funding to provide it. The county, although nominally a defendant, aligned *338 itself with plaintiffs. It admits the inadequacy of its program to provide medical care for MIA's but blames the absence of state subvention funds.¹

At hearings below, plaintiffs presented uncontradicted evidence regarding the enormous impact of these statutory changes upon the finances and population of Alameda County. That county now spends about \$40 million annually on health care for MIA's, of which the state reimburses about half. Thus, since article XIII B became effective, Alameda County's obligation for the health care of MIA's has risen from zero to more than \$20 million per year. The county has inadequate funds to discharge its new obligation for the health care of MIA's; as a result, according to the Court of Appeal, uncontested evidence from medical experts presented below shows that, “The delivery of health care to the indigent in Alameda County is in a state of shambles; the crisis cannot be overstated” “Because of inadequate state funding, some Alameda County residents are dying, and many others are suffering serious diseases and disabilities, because they cannot obtain adequate access to the medical care they need” “The system is clogged to the breaking point. ... All community clinics ... are turning away patients.” “The funding received by the county from the state for MIAs does not approach the actual cost of providing health care to the MIAs. As a consequence, inadequate resources available to county health services jeopardize the lives and health of thousands of people”

The trial court acknowledged that plaintiffs had shown irreparable injury, but denied their request for a preliminary injunction on the ground that they could not prevail in the action. It then granted the state's motion for summary judgment. Plaintiffs appealed from both decisions of the trial court.

The Court of Appeal consolidated the two appeals and reversed the rulings below. It concluded that plaintiffs had standing to bring this action to enforce the constitutional spending limit of [article XIII B](#), and that the action is not barred by the existence of administrative remedies available to counties. It then held that the shift of a portion of the cost of medical indigent care by the state to Alameda County constituted a state-mandated new program under the provisions of [article XIII B](#), which triggered that article's provisions requiring a subvention of funds by the state to reimburse Alameda *339 County for the costs of such program it was required to assume. The judgments denying a preliminary injunction and granting summary judgment for defendants were reversed. We granted review.

II. Standing

A. Plaintiffs have standing to bring an action for declaratory relief to determine whether the state is complying with [article XIII B](#).

Plaintiffs first claim standing as taxpayers under [Code of Civil Procedure section 526a](#), which provides that: "An action to obtain a judgment, restraining and preventing any illegal expenditure of, waste of, or injury to, the estate, funds, or other property of a county ..., may be maintained against any officer thereof, or any agent, or other person, acting in its behalf, either by a citizen resident therein, or by a corporation, who is assessed for and is liable to pay, or, within one year before the commencement of the action, has paid, a tax therein. ..." As in [Common Cause v. Board of Supervisors](#) (1989) 49 Cal.3d 432, 439 [261 Cal.Rptr. 574, 777 P.2d 610], however, it is "unnecessary to reach the question whether plaintiffs have standing to seek an injunction under [Code of Civil Procedure section 526a](#), because there is an independent basis for permitting them to proceed." Plaintiffs here seek a declaratory judgment that the transfer of responsibility for MIA's from the state to the counties without adequate reimbursement violates [article XIII B](#). A declaratory judgment that the state has breached its duty is essentially equivalent to an action in mandate to compel the state to perform its duty. (See [California Assn.](#)

[of Psychology Providers v. Rank](#) (1990) 51 Cal.3d 1, 9 [270 Cal.Rptr. 796, 793 P.2d 2], which said that a declaratory judgment establishing that the state has a duty to act provides relief equivalent to mandamus, and makes issuance of the writ unnecessary.) Plaintiffs further seek a mandatory injunction requiring that the state pay the health costs of MIA's under the Medi-Cal program until the state meets its obligations under [article XIII B](#). The majority similarly characterize plaintiffs' action as one comparable to mandamus brought to enforce [section 6 of article XIII B](#).

We should therefore look for guidance to cases that discuss the standing of a party seeking a writ of mandate to compel a public official to perform his or her duty.² Such an action may be brought by any person "beneficially interested" in the issuance of the writ. ([Code Civ. Proc., § 1086](#).) In [Carsten *340 v. Psychology Examining Com.](#) (1980) 27 Cal.3d 793, 796 [166 Cal.Rptr. 844, 614 P.2d 276], we explained that the "requirement that a petitioner be 'beneficially interested' has been generally interpreted to mean that one may obtain the writ only if the person has some special interest to be served or some particular right to be preserved or protected over and above the interest held in common with the public at large." We quoted from Professor Davis, who said, "One who is in fact adversely affected by governmental action should have standing to challenge that action if it is judicially reviewable." (Pp. 796-797, quoting 3 Davis, [Administrative Law Treatise](#) (1958) p. 291.) Cases applying this standard include [Stocks v. City of Irvine](#) (1981) 114 Cal.App.3d 520 [170 Cal.Rptr. 724], which held that low-income residents of Los Angeles had standing to challenge exclusionary zoning laws of suburban communities which prevented the plaintiffs from moving there; [Taschner v. City Council, supra](#), 31 Cal.App.3d 48, which held that a property owner has standing to challenge an ordinance which may limit development of the owner's property; and [Felt v. Waughop](#) (1924) 193 Cal. 498 [225 P. 862], which held that a city voter has standing to compel the city clerk to certify a correct list of candidates for municipal office. Other cases illustrate the limitation on standing: [Carsten v. Psychology Examining Com., supra](#), 27 Cal.3d 793, held that a member of the committee who was neither seeking a license nor in danger of losing one had no standing to challenge a change in the method of computing the passing score on the licensing examination; [Parker v. Bowron](#) (1953) 40 Cal.2d 344 [254 P.2d 6] held that a union official who was neither a city employee nor a city resident had no standing to compel a city to follow a prevailing wage ordinance; and [Dunbar v. Governing Board](#) (1969) 275 Cal.App.2d 14 [79 Cal.Rptr. 662] held that a member of

a student organization had standing to challenge a college district's rule barring a speaker from campus, but persons who merely planned to hear him speak did not.

No one questions that plaintiffs are affected by the lack of funds to provide care for MIA's. Plaintiffs, except for plaintiff Rabinowitz, are not merely citizens and taxpayers; they are medically indigent persons living in Alameda County who have been and will be deprived of proper medical care if funding of MIA programs is inadequate. Like the other plaintiffs here, *341 plaintiff Kinlaw, a 60-year-old woman with diabetes and hypertension, has no health insurance. Plaintiff Spier has a chronic back condition; inadequate funding has prevented him from obtaining necessary diagnostic procedures and physiotherapy. Plaintiff Tsosie requires medication for allergies and arthritis, and claims that because of inadequate funding she cannot obtain proper treatment. Plaintiff King, an epileptic, says she was unable to obtain medication from county clinics, suffered seizures, and had to go to a hospital. Plaintiff "Doe" asserts that when he tried to obtain treatment for AIDS-related symptoms, he had to wait four to five hours for an appointment and each time was seen by a different doctor. All of these are people personally dependent upon the quality of care of Alameda County's MIA program; most have experienced inadequate care because the program was underfunded, and all can anticipate future deficiencies in care if the state continues its refusal to fund the program fully.

The majority, however, argues that the county has no duty to use additional subvention funds for the care of MIA's because under [Government Code section 17563](#) "[a]ny funds received by a local agency ... pursuant to the provisions of this chapter may be used for any public purpose." Since the county may use the funds for other purposes, it concludes that MIA's have no special interest in the subvention.³

This argument would be sound if the county were already meeting its obligations to MIA's under [Welfare and Institutions Code section 17000](#). If that were the case, the county could use the subvention funds as it chose, and plaintiffs would have no more interest in the matter than any other county resident or taxpayer. But such is not the case at bar. Plaintiffs here allege that the county is not complying with its duty, mandated by [Welfare and Institutions Code section 17000](#), to provide health care for the medically indigent; the county admits its failure but pleads lack of funds. Once the county receives adequate funds, it must perform its statutory duty under [section 17000 of the Welfare and](#)

[Institutions Code](#). If it refused, an action in mandamus would lie to compel performance. (See [Mooney v. Pickett \(1971\) 4 Cal.3d 669 \[94 Cal.Rptr. 279, 483 P.2d 1231\]](#).) In fact, the county has made clear throughout this litigation that it would use the subvention funds to provide care for MIA's. The majority's conclusion that plaintiffs lack a special, beneficial interest in the state's compliance with [article XIII B](#) ignores the practical realities of health care funding.

Moreover, we have recognized an exception to the rule that a plaintiff must be beneficially interested. "Where the question is one of public right *342 and the object of the mandamus is to procure the enforcement of a public duty, the relator need not show that he has any legal or special interest in the result, since it is sufficient that he is interested as a citizen in having the laws executed and the duty in question enforced." ([Bd. of Soc. Welfare v. County of L. A. \(1945\) 27 Cal.2d 98, 100-101 \[162 P.2d 627\]](#).) We explained in [Green v. Obledo \(1981\) 29 Cal.3d 126, 144 \[172 Cal.Rptr. 206, 624 P.2d 256\]](#), that this "exception promotes the policy of guaranteeing citizens the opportunity to ensure that no governmental body impairs or defeats the purpose of legislation establishing a public right. ... It has often been invoked by California courts. [Citations.]"

[Green v. Obledo](#) presents a close analogy to the present case. Plaintiffs there filed suit to challenge whether a state welfare regulation limiting deductibility of work-related expenses in determining eligibility for aid to families with dependent children (AFDC) assistance complied with federal requirements. Defendants claimed that plaintiffs were personally affected only by a portion of the regulation, and had no standing to challenge the balance of the regulation. We replied that "[t]here can be no question that the proper calculation of AFDC benefits is a matter of public right [citation], and plaintiffs herein are certainly citizens seeking to procure the enforcement of a public duty. [Citation.] It follows that plaintiffs have standing to seek a writ of mandate commanding defendants to cease enforcing [the regulation] in its entirety." ([29 Cal.3d at p. 145](#).)

We again invoked the exception to the requirement for a beneficial interest in [Common Cause v. Board of Supervisors, supra, 49 Cal.3d 432](#). Plaintiffs in that case sought to compel the county to deputize employees to register voters. We quoted [Green v. Obledo, supra, 29 Cal.3d 126, 144](#), and concluded that "[t]he question in this case involves a public right to voter outreach programs, and plaintiffs have standing

as citizens to seek its vindication.” (49 Cal.3d at p. 439.) We should reach the same conclusion here.

B. Government Code sections 17500-17630 do not create an exclusive remedy which bars citizen-plaintiffs from enforcing article XIII B.

Four years after the enactment of [article XIII B](#), the Legislature enacted [Government Code sections 17500 through 17630](#) to implement [article XIII B, section 6](#). These statutes create a quasi-judicial body called the Commission on State Mandates, consisting of the state Controller, state Treasurer, state Director of Finance, state Director of the Office of Planning and Research, and one public member. The commission has authority to “hear and decide upon [any] claim” by a local government that it “is entitled to be reimbursed by the state” for costs under [article XIII B](#). (*343 [Gov. Code, § 17551, subd. \(a\)](#).) Its decisions are subject to review by an action for administrative mandamus in the superior court. (See [Gov. Code, § 17559](#).)

The majority maintains that a proceeding before the Commission on State Mandates is the exclusive means for enforcement of [article XIII B](#), and since that remedy is expressly limited to claims by local agencies or school districts ([Gov. Code, § 17552](#)), plaintiffs lack standing to enforce the constitutional provision.⁴ I disagree, for two reasons.

First, [Government Code section 17552](#) expressly addressed the question of exclusivity of remedy, and provided that “[t]his chapter shall provide the sole and exclusive procedure by which a local agency or school district may claim reimbursement for costs mandated by the state as required by [Section 6 of Article XIII B of the California Constitution](#).” (Italics added.) The Legislature was aware that local agencies and school districts were not the only parties concerned with state mandates, for in [Government Code section 17555](#) it provided that “any other interested organization or individual may participate” in the commission hearing. Under these circumstances the Legislature’s choice of words—“the sole and exclusive procedure by which a local agency or school district may claim reimbursement”—limits the procedural rights of those claimants only, and does not affect rights of other persons. *Expressio unius est exclusio alterius*—“the expression of certain things in a statute necessarily involves exclusion of other things not expressed.” (*Henderson v. Mann Theatres Corp.* (1976) 65 Cal.App.3d 397, 403 [135 Cal.Rptr. 266].)

The case is similar in this respect to [Common Cause v. Board of Supervisors](#), *supra*, 49 Cal.3d 432. Here defendants contend that the counties’ right of action under [Government Code sections 17551-17552](#) impliedly excludes *344 any citizen’s remedy; in *Common Cause* defendants claimed the Attorney General’s right of action under [Elections Code section 304](#) impliedly excluded any citizen’s remedy. We replied that “the plain language of [section 304](#) contains no limitation on the right of private citizens to sue to enforce the section. To infer such a limitation would contradict our long-standing approval of citizen actions to require governmental officials to follow the law, expressed in our expansive interpretation of taxpayer standing [citations], and our recognition of a ‘public interest’ exception to the requirement that a petitioner for writ of mandate have a personal beneficial interest in the proceedings [citations].” (49 Cal.3d at p. 440, fn. omitted.) Likewise in this case the plain language of [Government Code sections 17551-17552](#) contain no limitation on the right of private citizens, and to infer such a right would contradict our long-standing approval of citizen actions to enforce public duties.

The United States Supreme Court reached a similar conclusion in *Rosado v. Wyman* (1970) 397 U.S. 397 [25 L.Ed.2d 442, 90 S.Ct. 1207]. In that case New York welfare recipients sought a ruling that New York had violated federal law by failing to make cost-of-living adjustments to welfare grants. The state replied that the statute giving the Department of Health, Education and Welfare authority to cut off federal funds to noncomplying states constituted an exclusive remedy. The court rejected the contention, saying that “[w]e are most reluctant to assume Congress has closed the avenue of effective judicial review to those individuals most directly affected by the administration of its program.” (P. 420 [25 L.Ed.2d at p. 460].) The principle is clear: the persons actually harmed by illegal state action, not only some administrator who has no personal stake in the matter, should have standing to challenge that action.

Second, [article XIII B](#) was enacted to protect taxpayers, not governments. [Sections 1 and 2 of article XIII B](#) establish strict limits on state and local expenditures, and require the refund of all taxes collected in excess of those limits. [Section 6 of article XIII B](#) prevents the state from evading those limits and burdening county taxpayers by transferring financial responsibility for a program to a county, yet counting the cost of that program toward the limit on state expenditures.

These provisions demonstrate a profound distrust of government and a disdain for excessive government spending. An exclusive remedy under which only governments can enforce [article XIII B](#), and the taxpayer-citizen can appear only if a government has first instituted proceedings, is inconsistent with the ethos that led to [article XIII B](#). The drafters of [article XIII B](#) and the voters who enacted it would not accept that the state Legislature—the principal body regulated by the article—could establish a procedure ***345** under which the only way the article can be enforced is for local governmental bodies to initiate proceedings before a commission composed largely of state financial officials.

One obvious reason is that in the never-ending attempts of state and local government to obtain a larger proportionate share of available tax revenues, the state has the power to coerce local governments into foregoing their rights to enforce [article XIII B](#). An example is the Brown-Presley Trial Court Funding Act ([Gov. Code, § 77000 et seq.](#)), which provides that the county's acceptance of funds for court financing may, in the discretion of the Governor, be deemed a waiver of the counties' rights to proceed before the commission on all claims for reimbursement for state-mandated local programs which existed and were not filed prior to passage of the trial funding legislation.⁵ The ability of state government by financial threat or inducement to persuade counties to waive their right of action before the commission renders the counties' right of action inadequate to protect the public interest in the enforcement of [article XIII B](#).

The facts of the present litigation also demonstrate the inadequacy of the commission remedy. The state began transferring financial responsibility for MIA's to the counties in 1982. Six years later no county had brought a proceeding before the commission. After the present suit was filed, two counties filed claims for 70 percent reimbursement. Now, nine years after the 1982 legislation, the counties' claims are pending before the Court of Appeal. After that court acts, and we decide whether to review its decision, the matter may still have to go back to the commission for hearings to ***346** determine the amount of the mandate—which is itself an appealable order. When an issue involves the life and health of thousands, a procedure which permits this kind of delay is not an adequate remedy.

In sum, effective, efficient enforcement of [article XIII B](#) requires that standing to enforce that measure be given to those harmed by its violation—in this case, the medically

indigent—and not be vested exclusively in local officials who have no personal interest at stake and are subject to financial and political pressure to overlook violations.

C. Even if plaintiffs lack standing this court should nevertheless address and resolve the merits of the appeal.

Although ordinarily a court will not decide the merits of a controversy if the plaintiffs lack standing (see [McKinny v. Board of Trustees](#) (1982) 31 Cal.3d 79, 90 [181 Cal.Rptr. 549, 642 P.2d 460]), we recognized an exception to this rule in our recent decision in [Dix v. Superior Court](#), *supra*, 53 Cal.3d 442 (hereafter *Dix*). In *Dix*, the victim of a crime sought to challenge the trial court's decision to recall a sentence under [Penal Code section 1170](#). We held that only the prosecutor, not the victim of the crime, had standing to raise that issue. We nevertheless went on to consider and decide questions raised by the victim concerning the trial court's authority to recall a sentence under [Penal Code section 1170, subdivision \(d\)](#). We explained that the sentencing issues “are significant. The case is fully briefed and all parties apparently seek a decision on the merits. Under such circumstances, we deem it appropriate to address [the victim's] sentencing arguments for the guidance of the lower courts. Our discretion to do so under analogous circumstances is well settled. [Citing cases explaining when an appellate court can decide an issue despite mootness.]” (53 Cal.3d at p. 454.) In footnote we added that “Under [article VI, section 12, subdivision \(b\) of the California Constitution](#) ..., we have jurisdiction to 'review the *decision of a Court of Appeal* in any cause.' (Italics added.) Here the Court of Appeal's decision addressed two issues—standing and merits. Nothing in [article VI, section 12\(b\)](#) suggests that, having rejected the Court of Appeal's conclusion on the preliminary issue of standing, we are foreclosed from 'review [ing]' the second subject addressed and resolved in its decision.” (Pp. 454-455, fn. 8.)

I see no grounds on which to distinguish *Dix*. The present case is also one in which the Court of Appeal decision addressed both standing and merits. It is fully briefed. Plaintiffs and the county seek a decision on the merits. While the state does not seek a decision on the merits in this proceeding, its appeal of the superior court decision in the mandamus proceeding brought by the County of Los Angeles (see maj. opn., *ante*, p. 330, fn. 2) shows that it is not opposed to an appellate decision on the merits. ***347**

The majority, however, notes that various state officials—the Controller, the Director of Finance, the Treasurer, and the Director of the Office of Planning and Research—did not

participate in this litigation. Then in a footnote, the majority suggests that this is the reason they do not follow the *Dix* decision. (Maj. opn., *ante*, p. 336, fn. 9.) In my view, this explanation is insufficient. The present action is one for declaratory relief against the state. It is not necessary that plaintiffs also sue particular state officials. (The state has never claimed that such officials were necessary parties.) I do not believe we should refuse to reach the merits of this appeal because of the nonparticipation of persons who, if they sought to participate, would be here merely as amici curiae.⁶

The case before us raises no issues of departmental policy. It presents solely an issue of law which this court is competent to decide on the briefs and arguments presented. That issue is one of great significance, far more significant than any raised in *Dix*. Judges rarely recall sentencing under [Penal Code section 1170, subdivision \(d\)](#); when they do, it generally affects only the individual defendant. In contrast, the legal issue here involves immense sums of money and affect budgetary planning for both the state and counties. State and county governments need to know, as soon as possible, what their rights and obligations are; legislators considering proposals to deal with the current state and county budget crisis need to know how to frame legislation so it does not violate [article XIII B](#). The practical impact of a decision on the people of this state is also of great importance. The failure of the state to provide full subvention funds and the difficulty of the county in filling the gap translate into inadequate staffing and facilities for treatment of thousands of persons. Until the constitutional issues are resolved the legal uncertainties may inhibit both levels of government from taking the steps needed to address this problem. A delay of several years until the Los Angeles case is resolved could result in pain, hardship, or even death for many people. I conclude that, whether or not plaintiffs have standing, this court should address and resolve the merits of the appeal.

D. Conclusion as to standing.

As I have just explained, it is not necessary for plaintiffs to have standing for us to be able to decide the merits of the appeal. Nevertheless, I conclude *348 that plaintiffs have standing both as persons “beneficially interested” under [Code of Civil Procedure section 1086](#) and under the doctrine of [Green v. Obledo, supra, 29 Cal.3d 126](#), to bring an action to determine whether the state has violated its duties under [article XIII B](#). The remedy given local agencies and school districts by [Government Code sections 17500- 17630](#) is, as [Government Code section 17552](#) states, the exclusive remedy

by which those bodies can challenge the state's refusal to provide subvention funds, but the statute does not limit the remedies available to individual citizens.

III. Merits of the Appeal

A. State funding of care for MIA's.

[Welfare and Institutions Code section 17000](#) requires every county to “relieve and support” all indigent or incapacitated residents, except to the extent that such persons are supported or relieved by other sources.⁷ From 1971 until 1982, and thus at the time [article XIII B](#) became effective, counties were not required to pay for the provision of health services to MIA's, whose health needs were met through the state-funded Medi-Cal program. Since the medical needs of MIA's were fully met through other sources, the counties had no duty under [Welfare and Institutions Code section 17000](#) to meet those needs. While the counties did make general contributions to the Medi-Cal program (which covered persons other than MIA's) from 1971 until 1978, at the time [article XIII B](#) became effective in 1980 the counties were not required to make any financial contributions to Medi-Cal. It is therefore undisputed that the counties were not required to provide financially for the health needs of MIA's when [article XIII B](#) became effective. The state funded all such needs of MIA's.

In 1982, the Legislature passed Assembly Bill No. 799 (1981-1982 Reg. Sess.; Stats. 1982, ch. 328, pp. 1568-1609) (hereafter AB No. 799), which removed MIA's from the state-funded Medi-Cal program as of January 1, 1983, and thereby transferred to the counties, through the County Medical Services Plan which AB No. 799 created, the financial responsibility to provide health services to approximately 270,000 MIA's. AB No. 799 required that the counties provide health care for MIA's, yet appropriated only 70 percent of what the state would have spent on MIA's had those persons remained a state responsibility under the Medi-Cal program.

Since 1983, the state has only partially defrayed the costs to the counties of providing health care to MIA's. Such state funding to counties was *349 initially relatively constant, generally more than \$400 million per year. By 1990, however, state funding had decreased to less than \$250 million. The state, however, has always included the full amount of its former obligation to provide for MIA's under the Medi-Cal program in the year preceding July 1, 1980, as part of its [article XIII B](#) “appropriations limit,” i.e., as part of the base amount of appropriations on which subsequent

annual adjustments for cost-of-living and population changes would be calculated. About \$1 billion has been added to the state's adjusted spending limit for population growth and inflation *solely* because of the state's inclusion of all MIA expenditures in the appropriation limit established for its base year, 1979-1980. The state has not made proportional increases in the sums provided to counties to pay for the MIA services funded by the counties since January 1, 1983.

B. The function of article XIII B.

Our recent decision in *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 486-487 [280 Cal.Rptr. 92, 808 P.2d 235] (hereafter *County of Fresno*), explained the function of [article XIII B](#) and its relationship to article XIII A, enacted one year earlier:

“At the June 6, 1978, Primary Election, article XIII A was added to the Constitution through the adoption of Proposition 13, an initiative measure aimed at controlling ad valorem property taxes and the imposition of new 'special taxes.' (*Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 231-232 [149 Cal.Rptr. 239, 583 P.2d 1281].) The constitutional provision imposes a limit on the power of state and local governments to adopt and levy taxes. (*City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 59, fn. 1 [266 Cal.Rptr. 139, 785 P.2d 522] (*City of Sacramento*)).

“At the November 6, 1979, Special Statewide Election, [article XIII B](#) was added to the Constitution through the adoption of Proposition 4, another initiative measure. That measure places limitations on the ability of both state and local governments to appropriate funds for expenditures.

“ 'Articles XIII A and XIII B work in tandem, together restricting California governments' power both to levy and to spend [taxes] for public purposes.' (*City of Sacramento, supra*, 50 Cal.3d at p. 59, fn. 1.)

“Article XIII B of the Constitution was intended ... to provide 'permanent protection for taxpayers from excessive taxation' and 'a reasonable way to provide discipline in tax spending at state and local levels.' (See *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 446 [170 Cal.Rptr. 232], quoting and following *Ballot Pamp., Proposed Stats. and Amends. to Cal. Const. with arguments to voters, Special Statewide Elec. (Nov. 6, 1979), argument *350* in favor of Prop. 4, p. 18.) To this end, it establishes an 'appropriations limit' for both state and local governments (Cal. Const., art. XIII B, § 8, subd. (h))

and allows no 'appropriations subject to limitation' in excess thereof (*id.*, § 2).⁸ (See *County of Placer v. Corin, supra*, 113 Cal.App.3d at p. 446.) It defines the relevant 'appropriations subject to limitation' as 'any authorization to expend during a fiscal year the proceeds of taxes' (Cal. Const., art. XIII B, § 8, subd. (b).)” (*County of Fresno, supra*, 53 Cal.3d at p. 486.)

Under [section 3 of article XIII B](#) the state may transfer financial responsibility for a program to a county if the state and county mutually agree that the appropriation limit of the state will be decreased and that of the county increased by the same amount.⁹ Absent such an agreement, however, [section 6 of article XIII B](#) generally precludes the state from avoiding the spending limits it must observe by shifting to local governments programs and their attendant financial burdens which were a state responsibility prior to the effective date of [article XIII B](#). It does so by requiring that “Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the cost of such program or increased level of service”¹⁰

“[Section 6](#) was included in [article XIII B](#) in recognition that article XIII A of the Constitution severely restricted the taxing powers of local governments. (See *County of Los Angeles [v. State of California]* (1987) 43 Cal.3d 46, 61 [233 Cal.Rptr. 38, 729 P.2d 202].) The provision was intended to preclude the state from shifting financial responsibility for carrying out governmental functions onto local entities that were ill equipped to handle the task. (*Ibid.*; see *Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d 830, 836, fn. 6.) Specifically, it was designed to protect the tax *351 revenues of local governments from state mandates that would require expenditure of such revenues.” (*County of Fresno, supra*, 53 Cal.3d at p. 487.)

C. Applicability of article XIII B to health care for MIA's.

The state argues that care of the indigent, including medical care, has long been a county responsibility. It claims that although the state undertook to fund this responsibility from 1979 through 1982, it was merely temporarily (as it turned out) helping the counties meet their responsibilities, and that the subsequent reduction in state funding did not impose any “new program” or “higher level of service” on the counties within the meaning of [section 6 of article XIII B](#). Plaintiffs respond that the critical question is not the traditional roles of the county and state, but who had the fiscal responsibility

on November 6, 1979, when [article XIII B](#) took effect. The purpose of [article XIII B](#) supports the plaintiffs' position.

As we have noted, article XIII A of the Constitution (Proposition 13) and [article XIII B](#) are complementary measures. The former radically reduced county revenues, which led the state to assume responsibility for programs previously financed by the counties. [Article XIII B](#), enacted one year later, froze both state and county appropriations at the level of the 1978-1979 budgets—a year when the budgets included state financing for the prior county programs, but not county financing for these programs. [Article XIII B](#) further limited the state's authority to transfer obligations to the counties. Reading the two together, it seems clear that [article XIII B](#) was intended to limit the power of the Legislature to retransfer to the counties those obligations which the state had assumed in the wake of Proposition 13.

Under [article XIII B](#), both state and county appropriations limits are set on the basis of a calculation that begins with the budgets in effect when [article XIII B](#) was enacted. If the state could transfer to the county a program for which the state at that time had full financial responsibility, the county could be forced to assume additional financial obligations without the right to appropriate additional moneys. The state, at the same time, would get credit toward its appropriations limit for expenditures it did not pay. County taxpayers would be forced to accept new taxes or see the county forced to cut existing programs further; state taxpayers would discover that the state, by counting expenditures it did not pay, had acquired an actual revenue surplus while avoiding its obligation to refund revenues in excess of the appropriations limit. Such consequences are inconsistent with the purpose of [article XIII B](#).

Our decisions interpreting [article XIII B](#) demonstrate that the state's subvention requirement under [section 6](#) is not vitiated simply because the *352 “program” existed before the effective date of [article XIII B](#). The alternate phrase of [section 6 of article XIII B](#), “ ‘higher level of service[,]’ ... must be read in conjunction with the predecessor phrase ‘new program’ to give it meaning. Thus read, it is apparent that *the subvention requirement for increased or higher level of service is directed to state mandated increases in the services provided by local agencies in existing ‘programs.’*” (*County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56 [233 Cal.Rptr. 38, 729 P.2d 202], italics added.)

Lucia Mar Unified School Dist. v. Honig, supra, 44 Cal.3d 830, presents a close analogy to the present case. The state Department of Education operated schools for severely handicapped students, but prior to 1979 *school districts were required by statute to contribute* to education of those students from the district at the state schools. In 1979, in response to the restrictions on school district revenues imposed by Proposition 13, the statutes requiring such district contributions were repealed and the state assumed full responsibility for funding. The state funding responsibility continued until June 28, 1981, when [Education Code section 59300](#) (hereafter [section 59300](#)), requiring school districts to share in these costs, became effective.

The plaintiff districts filed a test claim before the commission, contending they were entitled to state reimbursement under [section 6 of article XIII B](#). The commission found the plaintiffs were not entitled to state reimbursement, on the rationale that the increase in costs to the districts compelled by [section 59300](#) imposed no new program or higher level of services. The trial and intermediate appellate courts affirmed on the ground that [section 59300](#) called for only an “ ‘adjustment of costs’ ” of educating the severely handicapped, and that “*a shift in the funding of an existing program is not a new program or a higher level of service*” within the meaning of [article XIII B](#). (*Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d at p. 834, italics added.)

We reversed, rejecting the state's theories that the funding shift to the county of the subject program's costs does not constitute a new program. “[There can be no] doubt that although the schools for the handicapped have been operated by the state for many years, the program was new insofar as plaintiffs are concerned, since *at the time section 59300 became effective* they were not required to contribute to the education of students from their districts at such schools. [¶] ... To hold, under the circumstances of this case, that a shift in funding of an existing program from the state to a local entity is not a new program as to the local agency would, we think, violate the intent underlying [section 6 of article XIII B](#). That article imposed spending limits on state and local governments, and it followed by one year the adoption by initiative of article XIII A, which severely limited the taxing *353 power of local governments. ... [¶] The intent of the section would plainly be violated if the state could, while retaining administrative control¹¹ of programs it has supported with state tax money, simply shift the cost of the programs to local government on the theory that the shift does not violate [section 6 of article XIII B](#) because the programs

are not 'new.' Whether the shifting of costs is accomplished by compelling local governments to pay the cost of entirely new programs created by the state, *or by compelling them to accept financial responsibility in whole or in part for a program which was funded entirely by the state before the advent of [article XIII B](#), the result seems equally violative of the fundamental purpose underlying [section 6](#) of that article.*" (*Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d at pp. 835- 836, fn. omitted, italics added.)

The state seeks to distinguish *Lucia Mar* on the ground that the education of handicapped children in state schools had never been the responsibility of the local school district, but overlooks that the local district had previously been required to contribute to the cost. Indeed the similarities between *Lucia Mar* and the present case are striking. In *Lucia Mar*, prior to 1979 the state and county shared the cost of educating handicapped children in state schools; in the present case from 1971-1979 the state and county shared the cost of caring for MIA's under the Medi-Cal program. In 1979, following enactment of Proposition 13, the state took full responsibility for both programs. Then in 1981 (for handicapped children) and 1982 (for MIA's), the state sought to shift some of the burden back to the counties. To distinguish these cases on the ground that care for MIA's is a county program but education of handicapped children a state program is to rely on arbitrary labels in place of financial realities.

The state presents a similar argument when it points to the following emphasized language from *Lucia Mar Unified School Dist. v. Honig, supra*, 44 Cal.3d 830: "[B]ecause [section 59300](#) shifts partial financial responsibility for the support of students in the state-operated schools from the state to school districts—an obligation the school districts did not have at the time [article XIII B](#) was adopted—it calls for plaintiffs to support a 'new program' within the meaning of [section 6](#)." (P. 836, fn. omitted, italics added.) It urges *Lucia Mar* reached its result *only* because the "program" requiring school district funding in that case *was not required by statute* at the effective date of *354 [article XIII B](#). The state then argues that the case at bench is distinguishable because it contends Alameda County had a continuing obligation *required by statute* antedating that effective date, which had only been "temporarily"¹² suspended when [article XIII B](#) became effective. I fail to see the distinction between a case—*Lucia Mar*—in which no existing statute as of 1979 imposed an obligation on the local government and one—this case—in which the statute existing in 1979 imposed no obligation on local government.

The state's argument misses the salient point. As I have explained, the application of [section 6 of article XIII B](#) does not depend upon when the program was created, but upon who had the burden of funding it when [article XIII B](#) went into effect. Our conclusion in *Lucia Mar* that the educational program there in issue was a "new" program as to the school districts was not based on the presence or absence of any antecedent statutory obligation therefor. *Lucia Mar* determined that whether the program was new *as to the districts* depended on *when* they were compelled to assume the obligation to partially fund an existing program which they had not funded at the time [article XIII B](#) became effective.

The state further relies on two decisions, *Madera Community Hospital v. County of Madera* (1984) 155 Cal.App.3d 136 [201 Cal.Rptr. 768] and *Cooke v. Superior Court* (1989) 213 Cal.App.3d 401 [261 Cal.Rptr. 706], which hold that the county has a statutory obligation to provide medical care for indigents, but that it need not provide precisely the same level of services as the state provided under Medi-Cal.¹³ Both are correct, but irrelevant to this case.¹⁴ The county's obligation to MIA's is defined by [Welfare and Institutions Code section 17000](#), not by the former Medi-Cal program.¹⁵ If the *355 state, in transferring an obligation to the counties, permits them to provide less services than the state provided, the state need only pay for the lower level of services. But it cannot escape its responsibility entirely, leaving the counties with a state-mandated obligation and no money to pay for it.

The state's arguments are also undercut by the fact that it continues to use the approximately \$1 billion in spending authority, generated by its previous total funding of the health care program in question, as a portion of its initial *base spending limit* calculated pursuant to [sections 1](#) and [3 of article XIII B](#). In short, the state may maintain here that care for MIA's is a county obligation, but when it computes its appropriation limit it treats the entire cost of such care as a state program.

IV. Conclusion

This is a time when both state and county governments face great financial difficulties. The counties, however, labor under a disability not imposed on the state, for article XIII A of the Constitution severely restricts their ability to raise additional revenue. It is, therefore, particularly important to enforce the provisions of [article XIII B](#) which prevent

the state from imposing additional obligations upon the counties without providing the means to comply with these obligations.

The present majority opinion disserves the public interest. It denies standing to enforce [article XIII B](#) both to those persons whom it was designed to protect—the citizens and taxpayers—and to those harmed by its violation—the

medically indigent adults. And by its reliance on technical grounds to avoid coming to grips with the merits of plaintiffs' appeal, it permits the state to continue to violate [article XIII B](#) and postpones the day when the medically indigent will receive adequate health care.

Mosk, J., concurred. *356

Footnotes

1 The complaint also sought a declaration that the county was obliged to provide health care services to indigents that were equivalent to those available to nonindigents. This issue is not before us. The County of Alameda aligned itself with plaintiffs in the superior court and did not oppose plaintiffs' effort to enforce [section 6](#).

2 On November 23, 1987, the County of Los Angeles filed a test claim with the Commission. San Bernardino County joined as a test claimant. The Commission ruled against the counties, concluding that no state mandate had been created. The Los Angeles County Superior Court subsequently granted the counties' petition for writ of mandate ([Code Civ. Proc., § 1094.5](#)), reversing the Commission, on April 27, 1989. (No. C-731033.) An appeal from that judgment is presently pending in the Court of Appeal. (*County of Los Angeles v. State of California*, No. B049625.)

3 Plaintiffs argue that they seek only a declaration that AB 799 created a state mandate and an injunction against the shift of costs until the state decides what action to take. This is inconsistent with the prayer of their complaint which sought an injunction requiring defendants to restore Medi-Cal eligibility to all medically indigent adults until the state paid the cost of full health services for them. It is also unavailing.

An injunction against enforcement of a state mandate is available only after the Legislature fails to include funding in a local government claims bill following a determination by the Commission that a state mandate exists. ([Gov. Code, § 17612](#).) Whether plaintiffs seek declaratory relief and/or an injunction, therefore, they are seeking to enforce [section 6](#).

All further statutory references are to the Government Code unless otherwise indicated.

4 The test claim by the County of Los Angeles was filed prior to that proposed by Alameda County. The Alameda County claim was rejected for that reason. (See § 17521.) Los Angeles County permitted San Bernardino County to join in its claim which the Commission accepted as a test claim intended to resolve the issues the majority elects to address instead in this proceeding. Los Angeles County declined a request from Alameda County that it be included in the test claim because the two counties' systems of documentation were so similar that joining Alameda County would not be of any benefit. Alameda County and these plaintiffs were, of course, free to participate in the Commission hearing on the test claim. (§ 17555.)

5 " 'Local agency' means any city, county, special district, authority, or other political subdivision of the state." (§ 17518.)

6 " 'School district' means any school district, community college district, or county superintendant of schools." (§ 17519.)

- 7 Plaintiffs' argument that the Legislature's failure to make provision for individual enforcement of [section 6](#) before the Commission demonstrates an intent to permit legal actions, is not persuasive. The legislative statement of intent to relegate all mandate disputes to the Commission is clear. A more likely explanation of the failure to provide for test cases to be initiated by individuals lies in recognition that (1) because [section 6](#) creates rights only in governmental entities, individuals lack sufficient beneficial interest in either the receipt or expenditure of reimbursement funds to accord them standing; and (2) the number of local agencies having a direct interest in obtaining reimbursement is large enough to ensure that citizen interests will be adequately represented.
- 8 Plaintiffs are not without a remedy if the county fails to provide adequate health care, however. They may enforce the obligation imposed on the county by [Welfare and Institutions Code sections 17000 and 17001](#), and by judicial action. (See, e.g., [Mooney v. Pickett \(1971\) 4 Cal.3d 669 \[94 Cal.Rptr. 279, 483 P.2d 1231\]](#).)
- 9 For this reason, it would be inappropriate to address the merits of plaintiff's claim in this proceeding. (Cf. [Dix v. Superior Court \(1991\) 53 Cal.3d 442 \[279 Cal.Rptr. 834, 807 P.2d 1063\]](#).) Unlike the dissent, we do not assume that in representing the state in this proceeding, the Attorney General necessarily represented the interests and views of these officials.
- 1 The majority states that "Plaintiffs are not without a remedy if the county fails to provide adequate health care They may enforce the obligation imposed on the county by [Welfare and Institutions Code sections 17000 and 17001](#), and by judicial action." (Maj. opn., ante, p. 336, fn. 8)

The majority fails to note that plaintiffs have already tried this remedy, and met with the response that, owing to the state's inadequate subvention funds, the county cannot afford to provide adequate health care.

- 2 It is of no importance that plaintiffs did not request issuance of a writ of mandate. In [Taschner v. City Council \(1973\) 31 Cal.App.3d 48, 56 \[107 Cal.Rptr. 214\]](#) (overruled on other grounds in [Associated Home Builders etc., Inc. v. City of Livermore \(1976\) 18 Cal.3d 582, 596 \[135 Cal.Rptr. 41, 557 P.2d 473, 92 A.L.R.3d 1038\]](#)), the court said that "[a]s against a general demurrer, a complaint for declaratory relief may be treated as a petition for mandate [citations], and where a complaint for declaratory relief alleges facts sufficient to entitle plaintiff to mandate, it is error to sustain a general demurrer without leave to amend."

In the present case, the trial court ruled on a motion for summary judgment, but based that ruling not on the evidentiary record (which supported plaintiffs' showing of irreparable injury) but on the issues as framed by the pleadings. This is essentially equivalent to a ruling on demurrer, and a judgment denying standing could not be sustained on the narrow ground that plaintiffs asked for the wrong form of relief without giving them an opportunity to correct the defect. (See [Residents of Beverly Glen, Inc. v. City of Los Angeles \(1973\) 34 Cal.App.3d 117, 127-128 \[109 Cal.Rptr. 724\]](#).)

- 3 The majority's argument assumes that the state will comply with a judgment for plaintiffs by providing increased subvention funds. If the state were instead to comply by restoring Medi-Cal coverage for MIA's, or some other method of taking responsibility for their health needs, plaintiffs would benefit directly.
- 4 The majority emphasizes the statement of purpose of [Government Code section 17500](#): "The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state-mandated local programs has not provided for the effective determination of the state's responsibilities under [section 6 of article XIII B of the California Constitution](#). The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary, and, therefore, in order to relieve unnecessary congestion of the judicial system, it is

necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs.”

The “existing system” to which [Government Code section 17500](#) referred was the Property Tax Relief Act of 1972 ([Rev. & Tax. Code, §§ 2201-2327](#)), which authorized local agencies and school boards to request reimbursement from the state Controller. Apparently dissatisfied with this remedy, the agencies and boards were bypassing the Controller and bringing actions directly in the courts. (See, e.g., [County of Contra Costa v. State of California \(1986\) 177 Cal.App.3d 62 \[222 Cal.Rptr. 750\]](#).) The legislative declaration refers to this phenomena. It does not discuss suits by individuals.

- 5 “(a) The initial decision by a county to opt into the system pursuant to Section 77300 shall constitute a waiver of all claims for reimbursement for state-mandated local programs not theretofore approved by the State Board of Control, the Commission on State Mandates, or the courts to the extent the Governor, in his discretion, determines that waiver to be appropriate; provided, that a decision by a county to opt into the system pursuant to Section 77300 beginning with the second half of the 1988-89 fiscal year shall not constitute a waiver of a claim for reimbursement based on a statute chaptered on or before the date the act which added this chapter is chaptered, which is filed in acceptable form on or before the date the act which added this chapter is chaptered. A county may petition the Governor to exempt any such claim from this waiver requirement; and the Governor, in his discretion, may grant the exemption in whole or in part. The waiver shall not apply to or otherwise affect any claims accruing after initial notification. Renewal, renegotiation, or subsequent notification to continue in the program shall not constitute a waiver. [¶] (b) The initial decision by a county to opt into the system pursuant to Section 77300 shall constitute a waiver of any claim, cause of action, or action whenever filed, with respect to the Trial Court Funding Act of 1985, Chapter 1607 of the Statutes of 1985, or Chapter 1211 of the Statutes of 1987.” ([Gov. Code, § 77203.5](#), italics added.)

“As used in this chapter, 'state-mandated local program' means any and all reimbursements owed or owing by operation of either [Section 6 of Article XIII B of the California Constitution](#), or [Section 17561 of the Government Code](#), or both.” ([Gov. Code, § 77005](#), italics added.)

- 6 It is true that these officials would participate in a proceeding before the Commission on State Mandates, but they would do so as members of an administrative tribunal. On appellate review of a commission decision, its members, like the members of the Public Utilities Commission or the Workers' Compensation Appeals Board, are not respondents and do not appear to present their individual views and positions. For example, in [Lucia Mar Unified School Dist. v. Honig \(1988\) 44 Cal.3d 830 \[244 Cal.Rptr. 677, 750 P.2d 318\]](#), in which we reviewed a commission ruling relating to subvention payments for education of handicapped children, the named respondents were the state Superintendent of Public Instruction, the Department of Education, and the Commission on State Mandates. The individual members of the commission were not respondents and did not participate.
- 7 [Welfare and Institutions Code section 17000](#) provides that “[e]very county ... shall relieve and support all incompetent, poor, indigent persons, and those incapacitated by age, disease, or accident, lawfully resident therein, when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions.”
- 8 [Article XIII B, section 1](#) provides: “The total annual appropriations subject to limitation of the state and of each local government shall not exceed the appropriations limit of such entity of government for the prior year adjusted for changes in the cost of living and population except as otherwise provided in this Article.”
- 9 [Section 3 of article XIII B](#) reads in relevant part: “The appropriations limit for any fiscal year ... shall be adjusted as follows:

“(a) In the event that the financial responsibility of providing services is transferred, in whole or in part ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriation limit of the transferee entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount. ...”

- 10 [Section 6 of article XIII B](#) further provides that the “Legislature may, but need not, provide such subvention of funds for the following mandates: (a) Legislative mandates requested by the local agency affected; (b) Legislation defining a new crime or changing an existing definition of a crime; or (c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.” None of these exceptions apply in the present case.
- 11 The state notes that, in contrast to the program at issue in *Lucia Mar*, it has not retained administrative control over aid to MIA's. But the quoted language from *Lucia Mar*, while appropriate to the facts of that case, was not intended to establish a rule limiting [article XIII B, section 6](#), to instances in which the state retains administrative control over the program that it requires the counties to fund. The constitutional language admits of no such limitation, and its recognition would permit the Legislature to evade the constitutional requirement.
- 12 The state's repeated emphasis on the “temporary” nature of its funding is a form of post hoc reasoning. At the time [article XIII B](#) was enacted, the voters did not know which programs would be temporary and which permanent.
- 13 It must, however, provide a *comparable* level of services. (See [Board of Supervisors v. Superior Court \(1989\)](#) 207 Cal.App.3d 552, 564 [254 Cal.Rptr. 905].)
- 14 Certain language in [Madera Community Hospital v. County of Madera, supra, 155 Cal.App.3d 136](#), however, is questionable. That opinion states that the “Legislature intended that County bear an obligation to its poor and indigent residents, *to be satisfied from county funds*, notwithstanding federal or state programs which exist concurrently with County's obligation and alleviate, to a greater or lesser extent, County's burden.” (P. 151.) [Welfare and Institutions Code section 17000](#) by its terms, however, requires the county to provide support to residents only “when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions.” Consequently, to the extent that the state or federal governments provide care for MIA's, the county's obligation to do so is reduced pro tanto.
- 15 The county's right to subvention funds under [article XIII B](#) arises because its duty to care for MIA's is a state-mandated responsibility; if the county had no duty, it would have no right to funds. No claim is made here that the funding of medical services for the indigent shifted to Alameda County is not a program “ 'mandated' ” by the state; i.e., that Alameda County has any option other than to pay these costs. ([Lucia Mar Unified School Dist. v. Honig, supra, 44 Cal.3d at pp. 836-837.](#))

59 Cal.4th 59

Supreme Court of California

LONG BEACH POLICE OFFICERS ASSOCIATION, Plaintiff and Appellant,

v.

CITY OF LONG BEACH et

al., Defendants and Appellants;

Los Angeles Times Communications LLC,

Real Party in Interest and Respondent.

No. S200872.

|

May 29, 2014.

Synopsis

Background: City police officers association brought action against city, seeking an injunction against disclosure, pursuant to the California Public Records Act (CPRA), of names of officers involved in shooting incidents over a five-year period. Newspaper company intervened and filed opposition, and city filed memorandum aligning itself with association. The Superior Court, Los Angeles County, No. NC055491, Patrick T. Madden, J., denied injunction without prejudice to future requests relating to individual officers. Association and city petitioned for writ of mandate, and the Court of Appeal affirmed. Association and city filed separate petitions for review, and the Supreme Court granted review, superseding the opinion of the Court of Appeal.

The Supreme Court, Kennard, J., held that CPRA did not protect officers' names from disclosure.

Affirmed.

Chin, J., dissented with opinion.

Procedural Posture(s): Petition for Discretionary Review; On Appeal; Motion for Permanent Injunction.

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Opinion

[KENNARD](#), J.*

*64 **461 A newspaper asked a city to release the names of police officers involved in certain **462 shootings while on duty. The police union then sought injunctive relief against the city in superior court, attempting to prevent release of the names. The newspaper intervened (seeking disclosure of the names), and the city then aligned itself with the union (opposing disclosure). The trial court denied the union's request for a permanent injunction; that denial was upheld on appeal. We granted the separate petitions for review filed by the city and the union. We now affirm the judgment of the Court of Appeal.

I

Shortly before 5:00 p.m., on December 12, 2010, two City of Long Beach police officers responded to a resident's telephone call about an intoxicated man brandishing a “six-shooter” on neighboring property. At the sight of the two officers, the man (35-year-old Douglas Zerby) pointed at them an object resembling a gun. The officers immediately fired multiple rounds at Zerby, killing him. It turned out that

the object Zerby was holding was a garden hose spray nozzle with a pistol grip.

Three days later, reporter Richard Winton of the Los Angeles Times (the Times), asked the Long Beach City Attorney's Office for “[t]he names of Long Beach police officers involved in the December 12[, 2010,] office[r-]involved shooting in the 5300 block of East Ocean Boulevard” (the Zerby shooting), as well as “[t]he names of Long Beach police officers involved in officer [-]involved shootings from Jan[uary] 1[, 2005] to Dec[ember] 11, 2010” (the nearly six-year period leading up to the Zerby shooting). The request was made under the California Public Records Act ([Gov.Code, § 6250 et seq.](#)).

On December 30, 2010, plaintiff Long Beach Police Officers Association (the Union), the bargaining agent for all Long Beach police officers, sought injunctive relief in the superior court. Named as defendants were the City of Long Beach, the Long Beach Police Department, and its chief of police (collectively, the City). In its complaint, the Union asserted that the City had informed it that, unless prohibited by a court, the City would disclose the information sought by the Times. Accompanying the Union's request for injunctive relief was a declaration by Lieutenant Steve James, the Union's president, expressing concern that release of the officers' names could result *65 in “threats against the well being of officers or their families,” as occurred in one recent police shooting case in which release of an officer's name led to “death threats” against ***59 the officer. James also mentioned an anonymous post on an Internet Web site, wishing that the children of an officer involved in a particular police shooting would experience Christmas without their father. James asserted that the Internet offers broad access to personal information, using only a person's name as an Internet search term.

The superior court issued a temporary restraining order prohibiting the City from disclosing to the Times the names of the officers involved in the Zerby shooting. The court then continued the case to a later date to determine whether to issue a preliminary or permanent injunction, and it allowed the Times to intervene in the action.

Defendant City supported plaintiff Union's request for injunctive relief. The City asserted that the names of the two officers involved in the December 2010 fatal shooting of Zerby were exempt from disclosure under the California Public Records Act. With respect to the names of the City's

police officers involved in *earlier* shootings, the City asserted that those names, too, were likely subject to the same statutory exemptions but that its practice was to evaluate each disclosure request on a “case-by-case basis.”

The City submitted a declaration by Long Beach Police Lieutenant Lloyd Cox, who was in charge of “the criminal and administrative investigations related to all Officer Involved Shootings.” The declaration stated that the police department conducts an administrative investigation of every officer-involved shooting, and, if warranted, an internal criminal investigation follows. Documents resulting from these investigations are treated by the police department as personnel records that are statutorily exempt from disclosure.

****463** Cox's declaration also stated that revealing the name of an officer involved in a shooting could expose the officer and the officer's family to harassment, because the officer's home address and other personal information could easily be found using the Internet. The declaration further stated that when, for example, an officer is involved in a shooting of a gang member, it is not uncommon for the gang to retaliate against the officer. Cox mentioned eight “Officer Safety Bulletins ... about potential retaliation/threats against officers,” two of which were related to shootings, and he also described graffiti in the City of Long Beach that read “Strike Kill a Cop.”

In arguing against disclosure of the names of the officers involved in the Zerby shooting, the Union and the City cited [Government Code section 6255, subdivision \(a\)](#), which authorizes denial of a public records request when “the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record.” The Union and the City ***66** argued that the public interest in preventing harassment, threats, or violence against officers and their families outweighed any benefit the public would gain from disclosure.

The Times moved to strike Lieutenant James's declaration (filed by the Union), but the Times did not object to the declaration of Lieutenant Cox (filed by the City).¹ The trial court struck those *****60** portions of the James declaration that mentioned (1) the general safety concerns associated with releasing the names of officers involved in shootings, (2) the death threats made against specific officers involved in past shootings, and (3) the ease with which a name can be used to gather personal information over the Internet. The trial court then denied the Union's request for a preliminary or permanent injunction, and it discharged the temporary

restraining order. The court ruled that none of the disclosure exemptions in the California Public Records Act protected the names of officers involved in shootings. With respect to the potential harassment facing those officers and their families, the court considered such harassment to be speculative in the absence of a particularized showing regarding a specific officer. Recognizing that such a showing might be made in the future, the superior court denied injunctive relief “without prejudice” to a renewed request demonstrating that “releasing the names of particular officers will create a likelihood of harm.”

The Union and the City appealed, without success. We then granted their petitions for review.²

II

A. Statutory Law

The California Legislature in 1968, recognizing that “access to information concerning the conduct of the people's business is a fundamental and ***67** necessary right of every person in this state” ([Gov.Code, § 6250](#)), enacted the California Public Records Act, which grants access to public records held by state and local agencies (*id.*, § 6253, subd. (a)). The act broadly defines “[p]ublic records” as including “any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency....” (*Id.*, § 6252, subd. (e).) The act has certain ****464** specific exemptions (*id.*, §§ 6254–6254.30), but a public entity claiming an exemption must show that the requested information falls within the exemption (*id.*, § 6255, subd. (a)).

[Government Code section 6255's](#) subdivision (a) contains a “catchall exemption.” ([Michaelis, Montanari & Johnson v. Superior Court \(2006\) 38 Cal.4th 1065, 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.](#)) It allows a public agency to “justify withholding any record by demonstrating that ... on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record.” ([Gov.Code, § 6255, subd. \(a\).](#)) As we have said in the past, “this provision contemplates a case-by-case balancing process, with the burden of proof on the proponent of nondisclosure to demonstrate a clear overbalance on the side of confidentiality.” ([Michaelis, Montanari & Johnson, supra, at p. 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.](#))

Also relevant here is [Government Code section 6254, subdivision \(c\)](#), which ***61 protects “[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.” But the Union and the City place their greatest reliance on [Government Code section 6254, subdivision \(k\)](#). That provision protects “[r]ecords, the disclosure of which is exempted or prohibited pursuant to federal or state law, including, but not limited to, provisions of the Evidence Code relating to privilege.” Succinctly put, subdivision (k) “‘incorporates other [disclosure] prohibitions established by law.’” ([Copley Press, Inc. v. Superior Court \(2006\) 39 Cal.4th 1272, 1283, 48 Cal.Rptr.3d 183, 141 P.3d 288 \(Copley\)](#)), quoting [CBS, Inc. v. Block \(1986\) 42 Cal.3d 646, 656, 230 Cal.Rptr. 362, 725 P.2d 470.](#)) The “prohibitions” pertinent here are those set forth in a set of discovery statutes that the Legislature enacted in 1978 in response to our 1974 decision in [Pitchess v. Superior Court \(1974\) 11 Cal.3d 531, 113 Cal.Rptr. 897, 522 P.2d 305 \(Pitchess\)](#).

In *Pitchess*, a defendant charged with battery on four sheriff's deputies ([Pen.Code, §§ 242, 243, subd. \(b\)](#)) claimed he was defending himself against the deputies' use of excessive force. We held that defendants in similar situations had a right, albeit limited, to discover from a peace officer's employer the existence of any previous complaints about the officer's use of excessive force. ([Pitchess, supra, 11 Cal.3d at pp. 537–538, 113 Cal.Rptr. 897, 522 P.2d 305.](#)) In response to our *68 decision, the Legislature enacted several statutes, which we hereafter refer to as the “*Pitchess* statutes” and which we summarize below.

Under the *Pitchess* statutes, a public entity that employs peace officers must investigate and retain citizen complaints of any officer misconduct, such as the use of excessive force. ([Pen.Code, § 832.5.](#)) Litigants, upon a showing of good cause, are given limited access to records of such complaints and investigations ([Evid.Code, §§ 1043, 1045](#)), but such records are otherwise “confidential” and may “not be disclosed” ([Pen.Code, §§ 832.7, subd. \(a\), 832.8, subd. \(e\)](#)). Also protected as “confidential” are “[p]eace officer ... personnel records” and “information obtained from these records.” ([Id., § 832.7, subd. \(a\)](#).) Such “personnel records” include an officer's personal and family information, medical history, election of benefits ([id., § 832.8, subds. \(a\), \(b\) & \(c\)](#)), as well as matters related to the officer's “advancement, appraisal, or discipline” ([id., subd. \(d\)](#)). In addition, confidentiality applies to any information that

“would constitute an unwarranted invasion of [a peace officer's] personal privacy.” ([Id., § 832.8, subd. \(f\)](#).)

One other piece of legislation merits mention here. In 2004, California's voters passed an initiative measure that added to the state Constitution a provision directing the courts to broadly construe statutes that grant public access to government information and to narrowly construe statutes that limit such access. ([Cal. Const., art. I, § 3, subd. \(b\) \(2\)](#).) That provision, however, does not affect the construction of any statute “to the extent ... it protects [the] right to privacy, including any statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer.” (***465 [Cal. Const., art. I, § 3, subd. \(b\)\(3\)](#).) Thus, by its express terms, the constitutional provision excludes from the requirement of narrow construction those statutes that protect the privacy interests of peace officers, including [Government Code section 6254's](#) subdivision (c) and the *Pitchess* statutes, both of which are at issue here.

B. Decisional Law

Relevant here are two of this court's recent decisions, which considered the interplay ***62 between the *Pitchess* statutes and requests under the California Public Records Act for disclosure of peace officers' names.

In [Copley, supra, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288 \(decided in 2006\)](#), a newspaper publisher sought access to a civil service commission's records of an administrative appeal brought by a county sheriff's deputy who had been terminated for disciplinary reasons. After the commission denied the request, the publisher unsuccessfully petitioned the superior court for a writ of mandate, seeking to compel disclosure. The publisher then appealed, and the Court of Appeal *69 directed the civil service commission to give the publisher access to the records, and also to disclose the deputy's name. The Court of Appeal reasoned that because the *Pitchess* statutes define “personnel records” as any file maintained under the officer's name *by the officer's employing agency* ([Pen.Code, § 832.8](#)) and because the civil service commission was not the officer's employing agency, the civil service commission's records did not qualify as “personnel records” protected by the *Pitchess* statutes. At the request of two police unions that had intervened in the action, we granted review and, with one justice dissenting, reversed the Court of Appeal.

Copley held that the civil service commission's records of the deputy's appeal were confidential "personnel records" under the *Pitchess* statutes ([Pen.Code, §§ 832.7, 832.8](#)) and therefore exempt from disclosure. ([Copley, supra, 39 Cal.4th at pp. 1286–1296, 48 Cal.Rptr.3d 183, 141 P.3d 288.](#))

Copley explained that neither the language nor the legislative history of the *Pitchess* statutes suggested that a peace officer's privacy rights should have less protection simply because the officer's employer uses an outside agency like the civil service commission to conduct its administrative appeals. ([Copley, at p. 1295, 48 Cal.Rptr.3d 183, 141 P.3d 288.](#)) *Copley* also rejected the Court of Appeal's conclusion that *the name* of the officer who brought the appeal had to be disclosed, noting that the *Pitchess* statutes were "designed to protect, among other things, 'the identity of officers' subject to [citizen] complaints." ([Copley, at p. 1297, 48 Cal.Rptr.3d 183, 141 P.3d 288](#), quoting [Pen.Code, § 832.7, subd. \(a\)](#); see [Copley, at p. 1297, 48 Cal.Rptr.3d 183, 141 P.3d 288](#), quoting [Pen.Code, § 832.7, subd. \(c\)](#).)

Copley then discussed the Court of Appeal's reliance on an earlier appellate decision, [New York Times Co. v. Superior Court \(1997\) 52 Cal.App.4th 97, 60 Cal.Rptr.2d 410](#) (*New York Times*), which broadly declared that the *Pitchess* statutes do not prevent disclosure of *the names* of peace officers. ([Copley, supra, 39 Cal.4th at pp. 1297–1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.](#)) That categorical statement was made, we said, "[w]ithout any analysis," and was "simply incorrect, at least insofar as it applies to disciplinary matters like the one at issue [in *Copley*]." ([Id. at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.](#)) We disapproved *New York Times* to the extent that decision conflicted with our analysis in *Copley*. ([Copley, at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.](#))

In 2007, just one year after [Copley, supra, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288](#), we again addressed the issue of a newspaper's request, made under the California Public Records Act, for disclosure of the names of certain peace officers. In [Commission on Peace Officer Standards and Training v. Superior Court \(2007\) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462](#) (*Commission on Peace Officer Standards*), a newspaper sought certain information about peace officers hired statewide by various California public entities during a specified 10-year period. ***63 The information was contained in a database maintained by a public agency. When the agency denied the newspaper's request, the *70 newspaper challenged that decision in superior court, which ordered disclosure **466 of each officer's name, the appointing agency, the date of new

appointment, and, if applicable, the date of termination. The Court of Appeal reversed, but a majority of this court disagreed with the Court of Appeal. ([Id. at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#))

In *Commission on Peace Officer Standards*, the public agency that had compiled the peace officer database did not employ any of the peace officers, and therefore the entries in its database were not "personnel records" under a literal reading of the *Pitchess* statutes ([Pen.Code, § 832.8](#) [limiting personnel records to records held in files maintained by an individual's employer]). Nonetheless, a majority of this court concluded that the information in the database would fall within the protections afforded personnel records if the information was "obtained from" personnel records maintained by the employing agencies of the peace officers in question. ([Commission on Peace Officer Standards, supra, 42 Cal.4th at p. 289, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#)) The majority further concluded, however, "that peace officer personnel records include only the types of information enumerated in [Penal Code] section 832.8" ([id. at p. 293, 64 Cal.Rptr.3d 661, 165 P.3d 462](#)), and because the specific information the trial court ordered disclosed (the names of the officers, their employing agencies, and their employment dates) did not fall into any of the enumerated categories, it was not information obtained from protected personnel records ([id. at pp. 294–299, 64 Cal.Rptr.3d 661, 165 P.3d 462](#)), and therefore it was subject to disclosure.

Commission on Peace Officer Standards next held that [Government Code section 6254](#)'s subdivision (c), which is part of the California Public Records Act, also did not preclude disclosure of the information covered by the superior court's order. (See [Commission on Peace Officer Standards, supra, 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#)) As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that statutory provision authorizes denial of a public records request when the information sought consists of "[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy." ([Gov.Code, § 6254, subd. \(c\)](#).) *Commission on Peace Officer Standards* assumed for purposes of its analysis that the records at issue "may be characterized as '[p]ersonnel ... or similar files.'" ([Commission on Peace Officer Standards, at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#)) But it noted that the exemption set forth in [section 6254](#)'s subdivision (c) requires a balancing of "the privacy interests of peace officers in the information at issue against the public interest in disclosure," and it further noted that the

party opposing disclosure “has the burden” of showing that the records at issue fall within the exemption—a showing the agency failed to make in *Commission on Peace Officer Standards*. (*Commission on Peace Officer Standards*, at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

Against this background of relevant statutes and court decisions, we now consider the disclosure request of the Times.

*71 III

The Times, citing the California Public Records Act, seeks disclosure of the names of the two Long Beach police officers involved in the December 12, 2010, fatal shooting of Zerby, as well as the ***64 names of any Long Beach officers involved in shootings occurring between January 1, 2005, and December 11, 2010. The Union and the City oppose disclosure. They rely largely on the confidentiality protections afforded peace officers under the *Pitchess* statutes, focusing in particular on [Penal Code section 832.7](#)'s subdivision (a) (protecting from disclosure a peace officer's “personnel records”) and [Penal Code section 832.8](#)'s subdivision (d) (defining “personnel records” as including records of employee “appraisal[] or discipline”).

The Union and the City also attach significance to the italicized language in this quote from *Commission on Peace Officer Standards*: “[T]he legislative concern [in adopting [sections 832.7](#) and [832.8](#)] appears to have been with linking a named officer to the private or sensitive information listed in [section 832.8](#). ... It seems unlikely that the Legislature contemplated that the identification of an individual as a peace officer, unconnected **467 to any of the information it defined as part of a personnel record, would be rendered confidential by [section 832.8](#).” (*Commission on Peace Officer Standards*, *supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added.) The Union and the City contend that disclosing the names of officers involved in on-duty shootings necessarily links the named officers to private or sensitive information in their personnel files, information made confidential under [Penal Code section 832.7](#)'s subdivision (a). The Union and the City reason that because every on-duty shooting is routinely investigated by the employing agency, the details of every such incident (including the names of the officers involved) are “records relating to” officer “appraisal[] or discipline” ([Pen.Code.](#)

[§ 832.8, subd. \(d\)](#)), which, by definition, are confidential “personnel records” (*id.*, [§ 832.8](#)). We are not persuaded.

Although the *Pitchess* statutes limit public access to personnel records ([Pen.Code, § 832.7, subd. \(a\)](#)), including officer names if they are linked to information in personnel records (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462), many records routinely maintained by law enforcement agencies are not personnel records. For example, the information contained in the initial incident reports of an on-duty shooting are typically not “personnel records” as that term is defined in [Penal Code section 832.8](#). It may be true that such shootings are routinely investigated by the employing agency, resulting eventually in some sort of officer appraisal or discipline. But only the records generated in connection with that appraisal or discipline would come within the statutory definition of personnel records ([Pen.Code, § 832.8, subd. \(d\)](#)). We do not read the phrase “records relating to ... [¶] ... *72 [¶] ... [e]mployee ... appraisal[] or discipline” (*ibid.*) so broadly as to include every record that might be considered for purposes of an officer's appraisal or discipline, for such a broad reading of the statute would sweep virtually all law enforcement records into the protected category of “personnel records” (*id.*, [§ 832.8](#)).

[Government Code section 6254](#)'s subdivision (f) lends some support to our conclusion. Under that statute, when a shooting by a peace officer occurs during an arrest ([Gov.Code, § 6254, subd. \(f\)\(1\)](#)) or in the course of responding to a complaint or request for assistance (*id.*, [§ 6254, subd. \(f\)\(2\)](#)), and when the officer's name is recorded as one of the “factual circumstances” of the incident, disclosure of the officer's name is generally required. It thus appears that the Legislature draws a distinction between (1) records of factual information about an incident (which generally must be disclosed) and (2) records generated as part of an internal investigation ***65 of an officer in connection with the incident (which generally are confidential). We therefore agree with this point made in a 2008 opinion by the California Attorney General: “Generally speaking, a response to a request just for the names of officers involved in a particular incident may be provided without revealing any investigatory or disciplinary matter that may have arisen out of the incident. Disclosure would merely communicate a statement of fact that the named officers were involved in the incident. It would not imply any judgment that the actions taken were inappropriate or even suspect.” (91 Ops.Cal.Atty.Gen. 11, 16–17 (2008), fn. omitted.) An employing agency is, of course, free to

emphasize, when complying with a California Public Records Act request, that its disclosure of the names of officers involved in an incident does not imply any wrongdoing by those officers.

Significantly, the *Pitchess* statutes are silent as to whether the names of officers involved in shootings are protected “personnel records.” ([Pen.Code, § 832.8](#).) That silence is important because, as this court observed in *Commission on Peace Officer Standards*, the personnel records exemption is limited to the categories of information that are expressly “enumerated” in [Penal Code section 832.8](#). (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 293, 64 Cal.Rptr.3d 661, 165 P.3d 462.) That the Legislature did not intend to protect peace officers' identities can also be inferred from the Legislature's enactment of [Penal Code section 830.10](#), which requires uniformed officers to display their name or identification **468 number. That statute reflects a legislative policy that, generally, the public has a right to know the identity of an officer involved in an on-duty shooting.

Misplaced is the reliance by the Union and the City on this court's decision in *Copley, supra*, 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288. There, as we noted earlier, a newspaper publisher sought records of an administrative appeal brought by a sheriff's *73 deputy who had been terminated. This court concluded that the records (including the deputy's name) were confidential personnel records under the *Pitchess* statutes. (*Copley, at pp. 1297–1298, 48 Cal.Rptr.3d 183, 141 P.3d 288*.) Later, in *Commission on Peace Officer Standards*, this court emphasized that the records requested in *Copley* would have “linked” the deputy's name to “private or sensitive” personnel matters, thus explaining why the name at issue in *Copley* was protected. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462; see *id. at pp. 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462*.) Here, by contrast, disclosing the names of officers involved in various shootings would not imply that those shootings resulted in disciplinary action against the officers, and it would not link those names to any confidential personnel matters or other protected information.

In arguing here against disclosure of the officers' names, the Union and the City note this court's disapproval in *Copley, supra*, 39 Cal.4th at page 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288, of the Court of Appeal's statement in *New York Times, supra*, 52 Cal.App.4th at page 101, 60 Cal.Rptr.2d 410, that “

‘an individual's name is not exempt from disclosure’ ” under the *Pitchess* statutes. But, as we explained in *Commission on Peace Officer Standards, supra*, 42 Cal.4th at page 298, 64 Cal.Rptr.3d 661, 165 P.3d 462, this court disapproved the statement from *New York Times* only “ ‘insofar as it applie [d] to disciplinary matters like the one at issue’ ” in *Copley*. (See *Copley, at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288*.) The records sought in *Copley* linked the officer's name, not just to an on-duty shooting, but to a ***66 confidential disciplinary action involving the officer, and therefore they were exempt from disclosure. (See *Commission on Peace Officer Standards, supra*, 42 Cal.4th at pp. 295, 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Thus, *Copley*'s disapproval of the statement from *New York Times* did not alter the latter case's core holding, generally permitting disclosure of the names of peace officers involved in on-duty shootings. (See [91 Ops.Cal.Atty.Gen. 11, 13–15 \(2008\)](#) [discussing *Copley*'s effect on *New York Times*].)

Nor does [Government Code section 6254](#)'s subdivision (c), which is part of the California Public Records Act, help the Union and the City in their effort to prevent disclosure of the names of officers involved in shootings. As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that provision exempts from disclosure “[p]ersonnel ... or similar files” if disclosure “would constitute an unwarranted invasion of personal privacy.” ([Gov.Code, § 6254, subd. \(c\)](#).) A serious question arises as to whether the names of peace officers involved in particular law enforcement incidents can be characterized as “[p]ersonnel ... or similar files” (*ibid.*). Moreover, when it comes to the disclosure of a peace officer's name, the public's substantial interest in the conduct of its peace officers outweighs, in most cases, the officer's personal privacy interest. As we noted in *Commission on Peace Officer Standards*: “Peace officers ‘hold one of the most powerful positions in our society; our dependence on them is high and the potential for abuse of power is far from insignificant.’ *74 *City of Hemet v. Superior Court* (1995) 37 Cal.App.4th 1411, 1428 [44 Cal.Rptr.2d 532].) A police officer ‘possesses both the authority and the ability to exercise force. Misuse of [this] authority can result in significant deprivation of constitutional rights and personal freedoms, not to mention bodily injury and financial loss.’ (*Gray v. Udevitz* (10th Cir.1981) 656 F.2d 588, 591.)” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at pp. 299–300, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Thus, the public's significant interest in the conduct of its peace officers “diminishes and counterbalances” an officer's privacy interest in keeping his

or her name confidential. (*Id.* at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

****469** In a case such as this one, which concerns officer-involved shootings, the public's interest in the conduct of its peace officers is particularly great because such shootings often lead to severe injury or death. Here, therefore, in weighing the competing interests, the balance tips strongly in favor of identity disclosure and against the personal privacy interests of the officers involved. Of course, if it is essential to protect an officer's anonymity for safety reasons or for reasons peculiar to the officer's duties—as, for example, in the case of an undercover officer—then the public interest in disclosure of the officer's name may need to give way. (See *International Federation of Professional and Technical Engineers, Local 21, AFL-CIO v. Superior Court* (2007) 42 Cal.4th 319, 337, 64 Cal.Rptr.3d 693, 165 P.3d 488.) That determination, however, would need to be based on a particularized showing, which was not made here.

We next consider the City's assertion that [Government Code section 6254](#)'s subdivision (f) permits it to withhold the names of officers involved in on-duty shootings. That provision exempts from disclosure “[r]ecords ... of investigations conducted by ... any state or local police agency.” (*Ibid.*) The Times here is not seeking the records of any administrative or criminal investigation, so that exemption is inapplicable.

*****67** Finally, we consider the catchall exemption in [Government Code section 6255](#)'s subdivision (a), which allows a public agency to withhold any public record if the agency shows that “on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record.” The catchall exemption sets forth a balancing test, and we have already concluded that, generally, the balance of interests favors disclosing the names of peace officers involved in on-duty shootings. (See 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468, *ante.*) Vague safety concerns that apply to all officers involved in shootings are insufficient to tip the balance against disclosure of officer names. As we have said in the past, “[a] mere assertion of possible endangerment does not ‘clearly outweigh’ the public interest in access to ... records.” (*CBS, Inc. v. Block, supra*, 42 Cal.3d at p. 652, 230 Cal.Rptr. 362, 725 P.2d 470.)

The Union and the City assert that disclosing the names of peace officers involved in shootings could lead to harassment of those officers and their ***75** families. In rejecting that

argument, the trial court found that the Union and the City had offered “no evidence” of a “specific safety concern regarding any particular officer.” We agree. The declaration by Long Beach Police Lieutenant Cox (submitted by the City) described the possibility of gang retaliation against officers involved in shooting gang members, but those concerns were general in nature. The December 2010 Zerby shooting did not involve a gang member, and the Union and the City did not identify other shootings that did involve a gang member. The Cox declaration also mentioned two safety bulletins warning of “potential retaliation/threats” against officers involved in shootings, and it described graffiti that read “Strike Kill a Cop,” but those vague concerns do not establish any specific danger to the officers involved in the Zerby shooting or any shooting that occurred in the six years before the Zerby shooting (see the Times's public records request, quoted at 172 Cal.Rptr.3d at p. 58, 325 P.3d at p. 462, *ante.*).

We do not hold that the names of officers involved in shootings have to be disclosed in every case, regardless of the circumstances. We merely conclude, as did the trial court and the Court of Appeal, that the particularized showing necessary to outweigh the public's interest in disclosure was not made *here*, where the Union and the City relied on only a few vaguely worded declarations making only general assertions about the risks officers face after a shooting. The public records request by the Times is broadly worded and covers a wide variety of incidents. Thus, the Union and the City sought a blanket rule preventing the disclosure of officer names *every time* an officer is involved in a shooting. Such a rule would even prevent disclosure of the name of an officer who acted in a heroic manner that was unlikely to provoke retaliation of any kind, in which case officer ****470** safety would not be an issue. We reject that blanket rule.

The trial court's denial of injunctive relief was without prejudice to any later evidentiary showing that disclosing a particular officer's name would compromise that officer's safety or the safety of the officer's family. That ruling permits further litigation by the Union, and it reflects the trial court's recognition, which we share, that the public's interest in access to public records is not absolute and must be weighed against the countervailing privacy and safety interests of peace officers. Understandable are the general safety concerns of officers who fear retaliation from angry members of the community *****68** after an officer-involved shooting, especially when the shooting results in the death of an unarmed person. But the Legislature, whose laws we must construe, has not gone so far as to protect the names of

all officers involved in such shootings. That the Legislature generally considers it important for the public to know the identities of the officers serving the community is reflected in the statutory provision requiring a uniformed officer to display either a name or an identification number ([Pen.Code, § 830.10](#)).

*76 DISPOSITION

We affirm the judgment of the Court of Appeal, which upheld the trial court's denial of the Union's requested injunctive relief.

WE CONCUR: [CANTIL-SAKAUYE](#), C.J., [BAXTER](#), [WERDEGAR](#), [CORRIGAN](#), [LIU](#), JJ.

Dissenting Opinion by [CHIN](#), J.

I disagree with the majority's conclusion that the City of Long Beach (the City) and the Long Beach Police Officers Association (the Union) have failed to show that the information the Los Angeles Times (the Times) has requested—the names of the officers “involved in” the December 12, 2010, shooting of Douglas Zerby and the names of all police officers “involved in” shootings from January 1, 2005, until December 11, 2010—is exempt from disclosure under the California Public Records Act (CPRA) ([Gov.Code, § 6250 et seq.](#)).¹ In my view, the evidence in the record of the safety threat faced by police officers identified as having been involved in a shooting establishes that the requested information is exempt from disclosure under [section 6254, subdivision \(c\)](#), which provides that the CPRA does not require disclosure of “[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.” I therefore dissent.

In relying on this section, the Union acknowledges that the majority in [Commission on Peace Officer Standards and Training v. Superior Court \(2007\) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462](#) (*Commission on Peace Officer Standards*) held that “the privacy and safety interests of peace officers” as a group regarding the mere fact of their employment “do not outweigh the public's interest in the disclosure of [that] information.” ([Commission on Peace Officer Standards, supra, 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.](#)) The Union argues, however, that the “heightened safety concerns of officers who have been

involved in shootings” warrant striking a different “balance” with regard to this “subgroup.” In support of its argument, the Union relies on the declaration of Long Beach Police Lieutenant Lloyd Cox (Cox declaration), which states in relevant part: (1) “A number of officer involved shootings involve gang members or violent criminals”; (2) “When an officer is involved in a shooting with a gang member, it is not uncommon for the gang to retaliate against law enforcement officers”; (3) “Since late 2007, the Long Beach Police Department has issued eight Officer Safety Bulletins to the department about potential retaliation/threats against officers, two of which were directly related to shootings involving police officers. As recently as January 10, 2011, the department was notified of graffiti at 5100 Appian Way *77 that was approximately 4 feet high and 6 inches long which read ‘Strike Kill a Cop’ ”; and (4) “Today, in the age of the internet, knowing an individual's name can be the gateway to a world of information. Public documents ***69 are readily **471 accessible on line and can provide anyone with the home address of an individual, including a police officer. The address of a police officer in the hands of a gang member, violent offender, or angry friend, relative, or associate of a person who was shot by a police officer is of great concern for the personal safety of both the officer and their [*sic*] family. Therefore the Long Beach Police Department insists on protecting the identity of its officers, when those officers are involved in critical incidents, including shootings, in order to ensure their safety and the safety of their families.”

I agree with the Union's argument. As I explained in *Commission on Peace Officer Standards*, “in 1990, the Legislature amended subdivision (a) of [[Penal Code](#)] [section 832.8](#) by adding [officers'] ‘home addresses’ to the list of examples of confidential ‘[p]ersonal data.’ (Stats.1990, ch. 264, § 1, p. 1535.) According to the amendment's legislative history, one of the Legislature's purposes in adding ‘home addresses’ to the list was to protect officers and their families. (Assem. Com. on Public Safety, Analysis of Sen. Bill 1985 (1989–1990 Reg. Sess.) as amended May, 16, 1990, p. 2.) Given that publicly available databases on the Internet make it easy to link a name to an address, the release of an officer's name would not seem to pose much, if any, less of a safety risk than would disclosing an officer's home address. (See [Frank v. City of Akron \(6th Cir.2002\) 290 F.3d 813, 819](#) [‘Most individuals' addresses ... are readily available on the Internet’].) ... [I]n light of the accessibility of information through the Internet, it would be entirely ‘feasible’ for someone hostile toward the police to use the list of names to locate peace officers' addresses in order

to ‘harass them’ or their families. [Citation.] Moreover, in light of the Legislature’s acknowledgment of the dangers faced by officers and their families, ... we [cannot] simply dismiss this threat as being ‘purely speculative.’ (See *King County v. Sheehan* [(2002) 114 Wash.App. 325, 340, 57 P.3d 307] [it is ‘naïve ... to believe that police officers who are identified on anti-police web sites ... by name and home address ... could not thereby be placed in danger or subjected to harassment’].)” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 317, 64 Cal.Rptr.3d 661, 165 P.3d 462 (dis. opn. of Chin, J.)) The evidence in the record here amply supports this analysis.

Nothing in the majority’s brief discussion of [section 6254, subdivision \(c\)](#), convinces me otherwise. The majority first asserts that there is a “serious question” as “to whether the names of peace officers involved in particular law enforcement incidents can be characterized as ‘[p]ersonnel ... or similar files’ ” within the meaning of [section 6254, subdivision \(c\)](#). (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) However, for reasons I have explained in a previous case, I have no trouble concluding that the names of officers who have been involved in a *78 shooting constitute “personnel ... or similar files” under [section 6254, subdivision \(c\)](#). (See *International Federation of Professional and Technical Engineers, Local 21, AFL–CIO v. Superior Court* (2007) 42 Cal.4th 319, 350–351, 64 Cal.Rptr.3d 693, 165 P.3d 488 (conc. & dis. opn. of Chin, J.) (*International Federation*).)

The majority then moves on to its primary focus: the public’s interest. Relying on *Commission on Peace Officer Standards*, the majority first identifies the public’s interest generally in “the conduct of its peace officers”—specifically, the “‘[m]isuse’ ” of their authority—and asserts that, “when it comes to the disclosure of a peace officer’s name,” this interest “outweighs, in most cases, the officer’s personal privacy interest.” (Maj. opn., ***70 *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468.) The majority next asserts that this general public interest “is particularly great” in connection with “officer-involved shootings” because “such shootings often lead to severe injury or death.” (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 468.) This heightened public interest, the majority states, “tips” the balance here “strongly in favor of identity disclosure.” (*Id.* at p. 66, 325 P.3d at p. 469.)

The majority’s discussion is unpersuasive for several reasons. First, the majority fails to explain how disclosing the name of an officer who has in any way been “involved in **472

officer involved shootings”—which is what the Times seeks—provides any information about whether the involved officers “ ‘ [m]isuse[d]’ ” their authority. (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) Thus, merely knowing which officers were “involved in officer involved shootings” does little, if anything, to advance the public’s interest in “the conduct of its peace officers.” (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 468.)

Second, the majority’s assessment of the public’s interest is inconsistent with the Legislature’s and the voters’ view of that interest. Through the *Pitchess* statutes (see maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 60–61, 325 P.3d at pp. 464–465), the Legislature has precluded the general public from obtaining “[p]eace officer ... personnel records” or “information obtained from these records.” ([Pen.Code, § 832.7, subd. \(a\)](#).) It has specified that this restriction protects records “relating to” (1) an officer’s “advancement, appraisal, or discipline” (*id.*, [§ 832.8, subd. \(d\)](#)), and (2) “[c]omplaints, or investigations of complaints, concerning an event or transaction in which [an officer] participated, or which he or she perceived, and pertaining to the manner in which he or she performed his or her duties” (*id.*, [§ 832.8, subd. \(e\)](#)). It has authorized law enforcement agencies to “disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers” *only* “if that information is in a form which does not identify the individuals involved.” (*Id.*, [§ 832.7, subd. \(c\)](#).) These provisions clearly express *the Legislature’s* view regarding the public’s interest in discovering whether particular officers have misused their power or even have been the subject of complaints about their conduct. *79 The voters have ratified the Legislature’s view by passing a constitutional provision that expressly preserves “statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer.” (Cal. Const., art. I, § 3, subd. (b)(3).) The majority improperly ignores these expressions of policy by the Legislature and the voters, and improperly substitutes its own view of policy. As a court, we have neither prerogative nor power “to substitute our public policy judgment” for that of the Legislature and the voters. (*Thomas v. City of Richmond* (1995) 9 Cal.4th 1154, 1165, 40 Cal.Rptr.2d 442, 892 P.2d 1185.)

The majority errs in asserting that [Penal Code section 830.10](#) “reflects a legislative policy that, generally, the public has a right to know the identity of an officer involved in an on-duty shooting.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65,

325 P.3d at p. 468.) That section provides: “Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of the officer.” ([Pen.Code, § 830.10](#).) On its face, the section applies only to “uniformed” officers. (*Ibid.*) Thus, to the extent it has any relevance to officers who are *not* in uniform, it indicates a legislative intent to protect their identities. Even as to uniformed officers, ***71 it fails to support the majority's broad conclusion that the public, “generally,” has a right to know the identity of officers involved in shootings. (Maj. opn., *ante*, at p. 64, 325 P.3d at p. 467.) Under the section, police departments may choose not to require their uniformed officers to display their names, and may instead require them only to display their “identification number[s].” ([Pen.Code, § 830.10](#).) Even were the statute to require officers to display their names, a statute affording the immediate participants in a police encounter access to the officers' names does not reflect a far broader legislative policy that, “generally, the public has a right to know the identity of an officer involved in an on-duty shooting.” (Maj. opn., *ante*, at p. 65, 325 P.3d at p. 468.) This conclusion is obvious from the fact that, as noted above, the *Pitchess* statutes allow law enforcement agencies to “disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers” *only* “if that information is in a form which does not identify the individuals involved.” ([Pen.Code, § 832.7, subd. \(c\)](#).) In other words, the Legislature has precluded release of identifying information *generally to the public* even though the names of officers against whom complaints have been made are known to those who have filed complaints. As the **473 majority recognized in *Commission on Peace Officer Standards*, “the mere fact that officers' names” may be displayed on their uniforms does not mean “that the information cannot be considered personal or private. (See *Department of Defense v. FLRA* (1994) 510 U.S. 487, 500, 114 S.Ct. 1006, 127 L.Ed.2d 325 ... [‘An individual's [privacy] interest in controlling the dissemination of information regarding personal matters does not dissolve *80 simply because that information may be available to the public in some form’].)”² (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 296, fn. 5, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

Nor do I agree with the majority that, under [section 6254, subdivision \(f\)](#), “when a shooting by a peace officer occurs during an arrest [citation] or in the course of responding to a complaint or request for assistance [citation], and when the officer's name is recorded as one of the factual circumstances of the incident, disclosure of the officer's name is generally

required.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 64, 325 P.3d at p. 467.) [Section 6254, subdivision \(f\)](#), generally exempts from disclosure under the CPRA “[r]ecords of complaints to, or investigations conducted by, ... any state or local police agency.” As here relevant, it further provides that, “[n]otwithstanding any other provision of this subdivision,” a law enforcement agency “shall” disclose the following: (1) “the factual circumstances surrounding the arrest” of each person the agency arrests ([§ 6254, subd. \(f\)\(1\)](#)); and (2) the “nature of the response” to all complaints or requests for assistance the agency receives, “including, ***72 to the extent the information regarding crimes alleged or committed or any other incident investigated is recorded, ... the factual circumstances surrounding the crime or incident” (*id.*, subd. (f)(2)). Where one of the specified incidents involves a shooting, it is not at all clear that the “factual circumstances surrounding” the incident (*id.*, subd. (f)(1), (2)) include the names of officers involved in the shooting. The majority cites, and I have found, no case supporting that view. Moreover, the language stating that these disclosure provisions apply “[n]otwithstanding any other provision of *this subdivision*” (*id.*, subd. (f), italics added) indicates that the section's disclosure requirement does not override the confidentiality provisions found in other statutes. Our courts of appeal have so construed the statute. (*County of Los Angeles v. Superior Court* (1993) 18 Cal.App.4th 588, 600, 22 Cal.Rptr.2d 409 [“we cannot construe [section 6254, subdivision \(f\)](#), to require” disclosure of “law enforcement information” the *Pitchess* statutes make confidential].) Finally, the statute itself authorizes nondisclosure “to the extent that disclosure of a particular item of information would endanger the safety of a person involved in an investigation or would endanger the successful completion of the *81 investigation or a related investigation.” ([§ 6254, subd. \(f\)](#).) Because, in my view, this would include the names of officers involved in shootings, I do not agree that, even under the circumstances the majority posits, [section 6254, subdivision \(f\)](#), “generally require[s]” disclosure of the information the Times seeks.³ (Maj. opn., *ante*, at p. 64, 325 P.3d at p. 466.)

**474 The majority also makes several errors in evaluating the other side of the balance: the interests of the officers in nondisclosure. Although relying principally on a heightened public interest in officer-involved shootings, the majority fails to consider or even acknowledge *the officer's* heightened privacy and safety interests in such cases. In this regard, *Commission on Peace Officer Standards*, on which the majority principally relies (maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), actually supports

the Union. There, in holding that “the typical peace officer has [no] more than an insubstantial privacy interest in the fact of his or her employment as an officer” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 300, 64 Cal.Rptr.3d 661, 165 P.3d 462), the majority reasoned that the fact of employment is “innocuous information” (*id.* at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462) because “it would not reveal [the ***73 officer's] involvement in any particular case” (*id.* at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added). In this regard, the majority reasoned, disclosure of basic employment information is different from the disclosure sought in *Stone v. F.B.I.* (D.D.C.1990) 727 F.Supp. 662 (*Stone*): the names of FBI agents “who participated in the investigation of the assassination of Robert F. Kennedy.” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) In *Stone*, “[w]hat could reasonably be expected to constitute an unwarranted invasion of an agent's privacy is not that he or she is revealed as an FBI agent but that he or she is named as an FBI agent who participated in the RFK investigation.” [Citation.]” (*Commission on Peace Officer Standards, supra*, at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The “ ‘concern is not with the identifying information *per se*, but with the connection between such information and some other detail—a statement, an event, or otherwise—which the individual would not wish to be publicly disclosed.’ ” (*Ibid.*, quoting *Halloran v. Veterans Admin.* (5th Cir.1989) 874 F.2d 315, 321.) Here, the information the *82 Times seeks would reveal the participation of the named officers in “particular case[s]” and would reveal their connection to an event—a shooting—they may “ ‘not wish to be publicly disclosed.’ ” (*Commission on Peace Officer Standards, supra*, at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As the majority opinion in *Commission on Peace Officer Standards* establishes, the officers therefore have a heightened privacy interest in nondisclosure. Moreover, the potentially incendiary nature of the information the Times seeks—an officer's involvement in a shooting—further heightens an officer's already elevated privacy interest in not being linked to “particular case[s].” (*Ibid.*) The majority errs in failing even to acknowledge this heightened interest.

Finally, the majority's conclusion that the Union's claim under [section 6254, subdivision \(c\)](#), fails for lack of a “particularized showing” regarding the need for confidentiality (maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468) is both erroneous and inconsistent with our prior decisions. The majority acknowledges both the

existence and validity of the “safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting.” (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 469.) It also acknowledges that *the record contains evidence* of “ ‘potential retaliation/threats' against officers involved in shootings.” (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469.) However, the majority finds this evidence too “vague” and insists that more is required; as to each officer whose name is to be withheld, there must be evidence to “establish” a “specific danger” to the officer or to the members of the officer's family. (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469.)

***475 The specificity of proof the majority demands is inconsistent with our decision in *Times Mirror Co. v. Superior Court* (1991) 53 Cal.3d 1325, 283 Cal.Rptr. 893, 813 P.2d 240 (*Times Mirror*). There, we held that, because of safety concerns, the Governor of California had properly refused to disclose his daily, weekly, and monthly appointment calendars and schedules. (*Id.* at pp. 1329, 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.) The only evidence supporting our conclusion was the declaration of the Governor's security director, which stated in the most general terms that disclosing this information “ ‘would seriously impair [his] ... ability to assure the Governor's security, and would constitute a potential threat to the Governor's safety, because the information ... will enable the ***74 reader to know in advance and with relative precision when and where the Governor may be found, those persons who will be with him, and when he will be alone.’ ” (*Id.* at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240, italics added.) Based on this evidence of a “ ‘potential threat to the Governor's safety’ ” (*ibid.*), and without requiring evidence of a particular or “specific” threat (maj. opn., *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468), we concluded that, even as to “outdated calendars and schedules,” nondisclosure was justified because “it is plausible to believe that an individual intent on doing harm [to the Governor] could use such information to discern activity patterns of the Governor and identify areas of particular vulnerability.” (*Times Mirror, supra*, at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) Here, based on *83 the Cox declaration, it is plausible to believe there are individuals, intent on doing harm to police officers in retaliation for their involvement in a shooting, who could use the requested information to exact revenge on the officers or members of their families. The “showing” in this case regarding safety concerns is certainly no more “vague,” and is at least as, if not more, “particularized” (maj. opn., *ante*, at p. 66, 325 P.3d at p. 469), than the showing we found sufficient in *Times Mirror*.⁴

The majority does not contend otherwise or explain why *Times Mirror* is inapplicable. Instead, in applying a different and far stricter standard, it simply ignores *Times Mirror*. It fails to explain why police officers and their family members are entitled to less protection than the Governor. Surely, their lives are not worth less. Nor is it less “plausible to believe” there are “individual[s] intent on doing harm” to police officers involved in shootings than it is to believe there are “individual[s] intent on doing harm” to the Governor. (*Times Mirror, supra*, 53 Cal.3d at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) On the contrary, as already noted, the majority acknowledges both the existence and validity of the “safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469.)

Contrary to the majority's suggestion (maj. opn., *ante*, 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), *Commission on Peace Officer Standards and International Federation* are consistent with, and supportive of, this analysis. In neither case was there any *evidence* submitted regarding the alleged safety concerns, a circumstance the court stressed in refusing to apply a disclosure exemption. (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462; *International Federation, supra*, 42 Cal.4th at pp. 337–338, 64 Cal.Rptr.3d 693, 165 P.3d 488.) Notably, after stating that “[a] mere assertion of possible endangerment” is insufficient to justify nondisclosure,” the majority in *Commission on Peace Officer Standards* cited *Times Mirror* as a case in which ***75 disclosure **476 was justified because *the evidence*—the “declaration of [the] Governor's security director”—“supported [the] conclusion that release of his schedules would present a potential security threat.” (*Commission on Peace Officer Standards, supra*, at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As earlier explained, here, even more than in *Times Mirror*, *evidence* regarding the dangers of disclosure was submitted. Moreover, in *Commission on Peace Officer Standards*, the majority held that, on remand, nondisclosure as to officers in certain “categories” could be justified “because the safety or *84 efficacy of” officers in those categories “would be jeopardized by disclosure.” (*Commission on Peace Officer Standards, supra*, 42 Cal.4th at p. 284, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The majority in *Commission on Peace Officer Standards* identified one such category: officers “operating undercover.” (*Id.* at p. 301, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The *Times*'s broad request for the names of all

officers “involved in” shootings from January 1, 2005, until December 11, 2010, surely includes such officers. Moreover, the evidence in the record here establishes another category of officers whose safety would be jeopardized by disclosure: those who have been involved in a shooting.

Contrary to the majority's suggestion, there is no basis for excluding from this category officers who, in using their weapons, “acted in a heroic manner that was unlikely to provoke retaliation.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 67, 325 P.3d at p. 469.) The majority asserts that safety is not “an issue” for such officers. (Maj. opn., *ante*, at p. 66, 325 P.3d at p. 468.) But the majority fails to explain how to distinguish between heroic acts that are likely to provoke retaliation and those that are not. And it is naïve to believe that the desire for revenge of friends, family members, and gang associates of those shot by police will be reduced, much less eliminated, by the fact that the officers acted heroically. Indeed, the majority's bald assertion will surely come as surprising news to the many officers who, having heroically used their weapons in confronting gang-related crime, face retaliation from other gang members. It simply is not true, as the majority asserts, that officer safety is “not ... an issue” whenever a shooting may be characterized as “heroic” and “unlikely to provoke retaliation.” (Maj. opn., *ante*, at p. 67, 325 P.3d at p. 469) Of course, as to individual officers who do not perceive a safety threat to themselves or their families, and who do not oppose public recognition of their heroism, [section 6254, subdivision \(c\)](#), would not prevent disclosure. Releasing an officer's name under those circumstances would not constitute “an unwarranted invasion of personal privacy.” (*Ibid.*)

Finally, there are good reasons for not requiring, as to each officer whose name is to be withheld, evidence of an actual and specific threat to the officer or the members of his or her family. Where, as here, the disclosure request covers all officer-involved shootings during a six-year period, requiring such individualized proof will impose an obvious and substantial burden on law enforcement agencies that want to protect their officers.⁵ More importantly, ***76 as the Union observes, “killers do not usually announce their intentions in advance.” Thus, in most cases, although the threat to officer safety is real, the *85 kind of evidence the majority demands is not available. Because the lives of our officers and their families are at stake, I would not require a law enforcement agency to wait until there is a specific threat—or worse, an actual attack—before allowing it to withhold information that puts its officers and their families

at risk. Absent a showing of some greater public need for the information, we should allow law enforcement agencies to protect the very officers who are out there every day protecting us. They deserve at least that much for their brave service.

I therefore dissent.⁶

All Citations

59 Cal.4th 59, 325 P.3d 460, 172 Cal.Rptr.3d 56, 199 L.R.R.M. (BNA) 3501, 42 Media L. Rep. 2105, 14 Cal. Daily Op. Serv. 5853, 2014 Daily Journal D.A.R. 6795

Footnotes

* Retired Associate Justice of the Supreme Court, assigned by the Chief Justice pursuant to [article VI, section 6 of the California Constitution](#).

¹ The Times contends that it was not properly served with the Cox declaration. The Times does not, however, assert that it raised that issue in the trial court, and hence the issue appears to have been forfeited. In any case, as discussed below, the trial court concluded that the facts asserted in the Cox declaration were too general and speculative to support the Union's request for injunctive relief. Therefore, any failure to properly serve the Cox declaration did not adversely affect the Times.

² Both the trial court and the Court of Appeal rejected the Times's legal issue that [Government Code sections 6258](#) and [6259](#) set forth the exclusive means for litigating whether requested records must be disclosed and that therefore declaratory relief was inappropriate. (See [Filarsky v. Superior Court \(2002\) 28 Cal.4th 419, 121 Cal.Rptr.2d 844, 49 P.3d 194](#) [holding that a *city* is not entitled to declaratory relief regarding its disclosure obligations under the California Public Records Act, but not deciding whether a *third party*—such as the Union here—is entitled to such relief].) We did not grant review to decide that legal issue, and we express no view on the matter. The issue remains open, and the Times can reassert it in any future proceedings.

¹ All further unlabeled statutory references are to the Government Code.

² The majority cites no legislative history to support its view of the “legislative policy” [Penal Code section 830.10](#) “reflects.” (Maj. opn., *ante*, 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468.) The statute derives from its substantively identical predecessor, Penal Code former section 830.7, which provided: “Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of such officer.” (Stats.1969, ch. 1458, § 1, p. 2978.) In the only illuminating item of legislative history I could find—a letter to the Governor urging him to sign the passed bill containing the statute—the bill's legislative author stated that it would “aid[] morale in that it goes far to halt the deindividualization of our law enforcement personnel.” (Assemblyman John Miller, letter to Governor Ronald Reagan re Assem. Bill No. 1830 (1969 Reg. Sess.) Aug. 8, 1969, p. 1.) This letter does not support the majority's assertion.

³ The majority asserts that the disclosure exemption of [section 6254, subdivision \(f\)](#), does not apply because the requested information comes from a source other than “the records of any administrative or criminal investigation” of officer-involved shootings (maj. opn., *ante*, 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469), perhaps “the initial incident reports” of such shootings (maj. opn., *ante*, at p. 61, 325 P.3d at p. 464). The appellate record offers no basis for the majority's speculation regarding the source of the requested information, as to either the Zerby shooting or any of the other officer-involved shootings that occurred during the six-year period the request identifies. Nor does the majority offer any legal basis for construing the broadly worded phrase “records *relating to* ... [¶] ... [¶] ... [e]mployee ... appraisal[] or discipline,” which defines one category of confidential personnel records under [Penal Code section 832.8, subdivision \(d\)](#), to apply narrowly

“only” to “the records *generated* in connection with” officer appraisal or discipline (maj. opn., *ante*, at pp. 63–64, 325 P.3d at pp. 466–467). Had the Legislature intended to so limit the scope of confidentiality under this section, it easily could have used the majority’s far narrower phrase.

- 4 Moreover, although there is a *greater* showing in this case regarding safety than in *Times Mirror*, the showing needed to justify nondisclosure here arguably *is less than* the showing that was needed in *Times Mirror*. Nondisclosure is proper under [section 6254, subdivision \(c\)](#), upon a showing that disclosure “would constitute an unwarranted invasion of personal privacy.” In *Times Mirror*, we held that nondisclosure was proper under [section 6255](#), which requires a showing that “on the facts of the particular case the public interest served by not disclosing the record *clearly outweighs* the public interest served by disclosure of the record.” (Italics added; see [Times Mirror, supra](#), 53 Cal.3d at pp. 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.)
- 5 For example, according to reported statistics, the Los Angeles Police Department averaged 70 officer-involved shootings per year for the years 2005–2008. (L.A. Police Dept., Use of Force Annual Report, p. 16 < [http:// www.lapdonline.org/assets/pdf/2009YearEndReportFinal.pdf](http://www.lapdonline.org/assets/pdf/2009YearEndReportFinal.pdf)> as of May 29, 2014.) In 42 officer-involved shootings internally reviewed in 2009 for compliance with department policy, “[t]here were 278 substantially involved officers,” 85 of whom “discharged their firearms.” (*Id.* at p. 19.)
- 6 Given my conclusion, I do not further address the majority’s analysis regarding the applicability of the exemptions set forth in [Government Code section 6255](#) and [Penal Code sections 832.7](#) and [832.8](#).

33 Cal.2d 635, 204 P.2d 7
Supreme Court of California

THE CITY OF NATIONAL CITY et al., Petitioners,

v.

GILBERT E. FRITZ, as City
Mayor, etc., et al., Respondents.

L. A. No. 20857.
Mar. 22, 1949.

HEADNOTES

(1)

Municipal Corporations § 161--Funds--Capital Outlays.
The term "utilities," as used in the statutory restriction on the use of a municipal fund established for capital outlays (Stats. 1937, p. 1995, Deering's Gen. Laws, Act 8496a) means "public utilities," and does not include sewers; hence such a fund may be used for the construction of sewers.

See 18 **Cal.Jur.** 870, 1076.

SUMMARY

PROCEEDING in mandamus to compel the signing of a contract and the transfer of a fund to meet payments thereunder. Writ granted.

COUNSEL

Burke, Marshall & Burke and Daniel G. Marshall for Petitioners.
Merideth L. Campbell, City Attorney, for Respondents.

CARTER, J.

The controversy in this proceeding involves the interpretation of a statute authorizing the establishment by municipal corporations of capital outlay funds (Stats. 1937, p. 1995, as amended last in 1945; Stats. 1945, p. 1867).

That act provides that the governing body of any city "empowered to levy and collect assessments or taxes may by ordinance provide for the levy and collection of assessments or taxes for the creation and accumulation of a fund for capital outlays." The general limitation on the right to impose taxes applies. "At any time after the creation of such a fund such governing body may transfer to such fund any unincumbered

surplus funds remaining on hand in such city, ... at the end of any fiscal year.

"Whenever such fund is created in the manner aforesaid it shall remain inviolate for the making of any capital outlays and no moneys shall be disbursed therefrom excepting for such a purpose;

*"The term 'capital outlays' shall not be construed to include the construction, acquisition, extensions of, or additions to, *636 utilities, other than utilities for the furnishing of water supply."* (Emphasis added.)

In the instant case the city council passed an ordinance purporting to create a capital outlay fund pursuant to the act. There is a dispute in regard to whether the ordinance in fact achieved that end inasmuch as it did not provide for the levy of taxes or assessments for the creation of the fund. It merely created the fund. But in view of the result reached herein, it is not necessary to resolve that question. From the receipts from sale of real property of the city to the United States, \$983,800.29 was ordered deposited in the fund by the city council and it is now there and unencumbered. The council has awarded contracts for the construction of sewers in the city in the sum of \$675,287.77 but respondent mayor of the city refuses to sign the contracts, and respondent clerk refuses to transfer said sum to the general fund to meet the payments under those contracts, claiming that moneys in the capital outlay fund cannot be used for sewer purposes under the above quoted act for the reason that a sewer is a utility as used in the last sentence dealing with things for which the fund cannot be used. Petitioners, on the other hand, take the position (among others) that a sewer is not a utility as that term is used in the act. With the latter contention we agree for the following reasons.

(1) The unqualified word "utility" has a broad meaning. It is defined as "quality or state of being useful; usefulness; profitableness to some desired end." (Webster's New Internat. Dict. (2d ed.) p. 2808.) (See also *Interstate National Gas Co. v. Gulley*, 4 F.Supp. 697, 699.) If that definition were applied to the statute in question, there would be practically no activity in which the city could use the money from the capital outlay fund because practically all of its property and public services are presumably for useful purposes. Thus the exception in the act (the italicized part thereof) for which funds may not be used would be broader than the main purpose of the act to authorize the creation of, and levy of taxes for, a capital outlay fund. Practically the only use that

could be made of the fund would be for a water supply which is an exception carved out of an exception. These factors, coupled with the rule that exceptions in a statute are to be strictly construed (*Hurst v. City & County of San Francisco*, ante, p. 298 [201 P.2d 805]; *McAlpine v. Baumgartner*, 10 Cal.2d 409 [74 P.2d 753]; *Dufton v. Daniels*, 190 Cal. 577 [213 P. 949]; *Forbes v. City of Los Angeles*, 101 Cal.App. 781 [282 P. 528]; Crawford, Statutory Construction, § 299), require that the word “utility” be interpreted to mean a “public utility,” for as will be seen, that term as used here has a more narrow meaning than “utility.”

We are convinced that the construction and maintenance of a sewer system is not a “public utility” within the meaning of the act. Generally speaking statutes should be construed in the light of other statutes dealing with the same subject matter. (*In re Phyle*, 30 Cal.2d 838 [186 P.2d 134]; *Stillwell v. State Bar*, 29 Cal.2d 119 [178 P.2d 313].) The term “public utilities,” with reference to the power of a municipal corporation to acquire and operate them, customarily embraces an enterprise which was usually engaged in by private corporations or individuals such as supplying water and electricity to the inhabitants. In this state it never has been the custom to have sewers operated privately. There was some doubt whether municipal corporations could acquire and operate such enterprises (public utilities) until the amendment to the Constitution (Cal. Const., art. XI, § 19) in 1911 authorizing such corporations to supply their inhabitants with light, water, power, heat, transportation and means of communications (18 Cal.Jur. 1076), but the power of municipal corporations to construct and maintain sewers has always been broad and unquestioned; the power may be derived from the authority to construct and maintain streets. (See *Harter v. Barkley*, 158 Cal. 742 [112 P. 556]; *Kramer v. Los Angeles*, 147 Cal. 668 [82 P. 334]; *McBean v. City of Fresno*, 112 Cal. 159, 163 [44

P. 358, 53 Am.St.Rep. 191, 31 L.R.A. 794]; *City of Madera v. Black*, 181 Cal. 306, 313 [184 P. 397]). The Public Utilities Act of this state lists many activities as “public utilities” but no mention is made of sewers (Stats. 1915, p. 115, as amended).

For the foregoing reasons it is clear that the term “utilities” as used in the exception in the statute in question does not include sewers. The fund here involved may, therefore, be used for construction of sewers.

Let a peremptory writ of mandate issue as prayed for.

Gibson, C. J., Shenk, J., Traynor, J., Schauer, J., and Spence, J., concurred.

EDMONDS, J.

Again the court has rendered what I consider to be an advisory opinion in a collusive proceeding *638 brought by a city against two of its officers. The result is a decision which places the stamp of the highest judicial approval upon financial transactions which affect every taxpayer of the city without any truly adversary presentation of the merits of the controversy. Moreover, the construction of the statute authorizing the establishment of a capital outlay fund may now be the unquestioned basis for action by the governing body of other cities. For the reasons I have stated in *City of Whittier v. Dixon*, 24 Cal.2d 664, 668 [151 P.2d 5, 153 A.L.R. 956]; *City and County of San Francisco v. Boyd*, 22 Cal.2d 685, 707 [140 P.2d 666]; *City and County of San Francisco v. Linares*, 16 Cal.2d 441, 448 [106 P.2d 369], I believe that this procedure is contrary to fundamental principles of the administration of justice.

49 Cal.4th 12

Supreme Court of California

SIMPSON STRONG-TIE COMPANY,
INC., Plaintiff and Appellant,

v.

Pierce GORE et al., Defendants and Respondents.

No. S164174

I

May 17, 2010.

Synopsis

Background: Manufacturer of name-brand galvanized screws brought claims for defamation, trade libel, false advertising, and unfair business practices against attorney, relating to attorney's newspaper advertisement stating that owners of wood decks, built with certain brand-name galvanized screws, "may" have legal rights to compensation or other relief. The Superior Court, Santa Clara County, No. CV057666, John F. Herlihy, J., granted attorney's special motion to strike under the anti-SLAPP (strategic lawsuit against public participation) statute. Manufacturer appealed. The Court of Appeal affirmed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, [Baxter](#), J., held that:

plaintiff has burden of establishing the applicability of a statutory exemption from anti-SLAPP statute, disapproving [Brill Media Co., LLC v. TCW Group, Inc.](#), 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371, and

"commercial speech" exemption from anti-SLAPP statute was inapplicable.

Affirmed.

Opinion, [76 Cal.Rptr.3d 292](#), superseded.

Attorneys and Law Firms

***332 Shartsis Friese, [Arthur J. Shartsis](#), [Erick C. Howard](#), San Francisco; Eisenberg and Hancock, [Jon B. Eisenberg](#) and [William N. Hancock](#), San Francisco, for Plaintiff and Appellant.

Davis Wright Tremaine, [Thomas R. Burke](#), San Francisco, and [Rochelle L. Wilcox](#), Los Angeles, for Defendants and Respondents.

Arkin & Glovsky, Pasadena, and [Sharon Arkin](#) for Consumer Attorneys of California as Amicus Curiae on behalf of Defendants and Respondents.

Levy, Ram & Olson and [Karl Olson](#), San Francisco, for Senator Sheila Kuehl and California First Amendment Coalition as Amici Curiae on behalf of Defendants and Respondents.

Opinion

[BAXTER](#), J.

*16 **1120 In this case we consider the scope of the commercial speech exemption to the anti-SLAPP statute. (See [Code Civ. Proc.](#), §§ 425.16, 425.17, subd. (c).)¹

In February 2006, plaintiff Simpson Strong-Tie Company, Inc. (Simpson) filed this action for defamation and related claims against defendants Pierce Gore and The Gore Law Firm arising from a newspaper advertisement placed by Gore a few weeks earlier. The advertisement, which was directed to owners of wood decks constructed after January 1, 2004, advised readers that "you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck" if the deck was built with galvanized screws manufactured by Simpson or other specified entities, and invited those persons to contact Gore "if you would like an attorney to investigate whether you have a potential claim."

*17 Gore moved successfully in the superior court to have the entire complaint stricken under [section 425.16](#), the anti-SLAPP ***333 statute, and the Court of Appeal affirmed. We granted review to consider the limited issue whether Simpson's complaint was exempt from the anti-SLAPP statute because of [section 425.17, subdivision \(c\) \(section 425.17\(c\)\)](#), which excludes causes of action arising from representations of fact about the speaker's or a competitor's "business operations, goods, or services ... made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services" or "made in the course of delivering the person's goods or services." Having found that the complaint is not exempt from dismissal under the anti-SLAPP statute, we affirm.

BACKGROUND

Plaintiff Simpson is a California corporation in the business of designing, manufacturing, and marketing building products, including metal connectors and other hardware for use in wood frame construction. According to Simpson, it is well known in the wood frame construction industry that pressure-treated wood, which is commonly used in outdoor decks to protect against termites and fungal decay, can have a corrosive effect on steel products, including galvanized screws. Corrosion potentially shortens the service life of these fasteners and connectors and compromises their ability to support their recommended loads or endure seismic and environmental stresses.

In early 2004, at the recommendation of the United States Environmental Protection Agency, the construction industry stopped selling lumber treated with chromium [copper](#) arsenate, due to health hazards posed by its arsenic content. Alternative lumber products, such as wood treated with alkaline [copper](#) quaternary and [copper](#) azole, were substituted, but, as Simpson explains, these chemicals are “more corrosive” to galvanized steel products. Simpson states that it communicated this potential problem to the building industry and to the public generally through its Web site, annual catalog, articles in engineering and building magazines, bulletins issued to the building industry, point-of-sale information, and annual report.

Gore, a California attorney, learned from television reports about the potential for corrosion of galvanized deck fasteners and connectors when used on wood pressure treated with alkaline [copper](#) quaternary or [copper](#) azole, and contacted Ted Todd, a senior inspector with the Contra Costa ***18** County District Attorney's Office who was featured in the television reports. At that time, the district attorney's office was conducting an investigation into the risk posed by galvanized fasteners and connectors when used with these types of pressure-treated wood. The office ultimately issued a “Consumer Alert” warning of the corrosive effect of the ****1121** new pressure-treated wood products “on the metal connector brackets typically used in construction.” The alert noted that advisories had been posted in some retail stores about the potential incompatibility of the two products but cautioned that the advisories “tend to be in very small print or somewhat inconspicuously posted.”

Gore also visited the company Web site, where Simpson had advised in bold type that “[m]any of the new Pressure Treated Woods use chemicals that are corrosive to steel. By selecting connectors that offer greater corrosion resistance ... you can extend the service life of your connectors. However, corrosion will still occur. You should perform periodic inspection of your connectors and fasteners to insure their strength is not being adversely affected by corrosion. In some cases, it may be necessary to have a local professional perform *****334** the inspections. Because of the many variables involved, Simpson Strong-Tie cannot provide estimates on service life of connectors, anchors or fasteners.”

In addition, Gore discovered that a class action complaint had been filed in Massachusetts against one of Simpson's competitors, Phillips Fastener Products, Inc., which sought relief on behalf of consumers allegedly damaged by defective galvanized fasteners and connectors used with pressure-treated lumber, and that Gore's former law firm, Lieff, Cabraser, Heimann & Bernstein, LLP, was investigating claims that some of the newly designed fasteners were failing, in spite of the manufacturers' representations that the “special coatings” were intended to resist corrosion.

Based on this information, Gore arranged for an advertisement to be placed in the San Jose Mercury News in order to locate individuals who had purchased galvanized fasteners and connectors manufactured by Simpson and two other companies, which together were responsible for most of the metal fasteners sold to consumers in California. The advertisement, which commenced Christmas Day 2005 and ran four more times over a 28-day period in the Mercury News and once in the Los Gatos Weekly-Times, read as follows:

***19**

<p>ATTENTION:</p> <p>WOOD DECK OWNERS</p> <p>If your deck was built after January 1, 2004 with galvanized screws manufactured by Phillips Fastener Products, Simpson Strong-Tie or Grip-Rite, you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck.</p> <p>Please call if you would like an attorney to investigate whether you have a potential claim:</p> <p style="text-align: center;">Pierce Gore GORE LAW FIRM 900 East Hamilton Ave. Suite 100 Campbell, CA 95008 408-879-7444</p>
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Gore has asserted that the wording of the advertisement was modeled after notices he or his cocounsel had used in this state and in others during the preceding three years in connection with potential class actions based on consumer fraud or product defects.

****1122** In a letter dated January 9, 2006, counsel for Simpson advised Gore that the advertisement falsely implied that Simpson's galvanized screws fail to meet appropriate industry standards and that a valid claim may exist against Simpson based upon negligence or product liability. The letter demanded that Gore cease publication of any further defamatory advertisements directed at Simpson and reserved Simpson's right to recover against Gore for any costs *****335** or damages that may have already resulted from this or any similar publication. Gore did not respond to the letter. In a letter dated January 27, 2006, counsel for Simpson declared that Gore's failure to respond "suggests that your claims are without merit, and that your newspaper advertisement is false, misleading, and defames Simpson.... Unless you can present specific evidence to support your charges, Simpson intends to pursue its defamation claim against your firm [] and vindicate its rights." Again, Gore did not respond.

Prior to filing this action, Simpson retained an opinion survey firm to confirm that the advertisement had caused injury to Simpson's reputation. The survey firm intercepted 214 randomly selected shoppers at nine different ***20** home improvement stores in January and February 2006 and obtained their responses to a set of questions with and without exposure to the Gore advertisement. The survey revealed that the shoppers, after reading the advertisement, were significantly more likely to believe that Simpson's galvanized screws were defective or of low quality and were significantly less likely to purchase galvanized screws manufactured by Simpson.

Two days after the survey was completed, Simpson filed this action for defamation, trade libel, false advertising, and unfair business practices. The complaint sought compensatory and punitive damages as well as injunctive relief.

When Gore moved to strike the complaint under [section 425.16](#), Simpson invoked the exemption to the anti-SLAPP law for commercial speech under [section 425.17\(c\)](#). The trial court granted the special motion to strike and entered a judgment of dismissal, finding Gore had made a threshold showing that the statements were made in furtherance of his right of petition or free speech on an issue of public interest (§

[425.16, subd. \(e\)\(4\)](#)), that Simpson had failed to demonstrate a probability of prevailing on the merits (§ [425.16, subd. \(b\)\(1\)](#)), and that the commercial speech exemption did not apply because the advertisement made no statement about a business competitor's products or services.

The Court of Appeal affirmed in a published opinion. The court first considered "who bears the burden of persuasion with respect to the applicability of [the [section 425.17\(c\)](#)] exemption—the party invoking the anti-SLAPP law (i.e., the defendant), or the party invoking the exemption (the plaintiff)?" In assigning the burden to the plaintiff, the Court of Appeal disagreed with *Brill Media Co., LLC v. TCW Group, Inc.* (2005) 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371 (*Brill*), which had assigned the burden to the defendant to establish that the cause of action is *not* exempt. The court next determined that while the advertisement was "made for the purpose of ... promoting ... [Gore's] services" (§ [425.17\(c\)\(1\)](#)), Simpson's causes of action did not "'aris[e] from' " any representation of fact "'about' Gore's or a competitor's services or business operations."

In construing the exemption in [section 425.17\(c\)\(1\)](#) for causes of action arising from statements or conduct "made in the course of delivering the person's goods or services," the Court of Appeal once again disagreed with *Brill*, which had found this prong was satisfied where "the statements were made and conduct engaged in as part of...the type of business transaction engaged in by defendants." (*Brill, supra*, 132 Cal.App.4th at p. 341, 33 Cal.Rptr.3d 371.) The Court of Appeal reasoned that the Legislature had enacted instead "a much narrower exemption, predicated by its plain terms on conduct in the course of ***21** *delivering the goods or services* the defendant is in the business of *selling or* *****336** *leasing*." The court then found that the advertisement here "was *seeking business from* prospective clients, not *delivering services to* them." Concluding that the anti-SLAPP statute applied and that Simpson had failed to establish a probability ****1123** of prevailing on any of its claims, the Court of Appeal affirmed the order granting the special motion to strike and the judgment of dismissal.

We granted review to address the conflict in the case law concerning the construction of the commercial speech exemption to the anti-SLAPP statute.

DISCUSSION

A SLAPP is a civil lawsuit that is aimed at preventing citizens from exercising their political rights or punishing those who have done so. “While SLAPP suits masquerade as ordinary lawsuits such as defamation and interference with prospective economic advantage, they are generally meritless suits brought primarily to chill the exercise of free speech or petition rights by the threat of severe economic sanctions against the defendant, and not to vindicate a legally cognizable right.” (*Castillo v. Pacheco* (2007) 150 Cal.App.4th 242, 249–250, 58 Cal.Rptr.3d 305, quoting Sen. Com. on Judiciary, Analysis of Sen. Bill No. 1296 (1997–1998 Reg. Sess.) as amended May 12, 1997, pp. 1–2.)

In 1992, out of concern over “a disturbing increase” in these types of lawsuits, the Legislature enacted [section 425.16](#), the anti-SLAPP statute. ([§ 425.16, subd. \(a\)](#).) The statute authorized the filing of a special motion to strike to expedite the early dismissal of these unmeritorious claims. ([§ 425.16, subs. \(b\)\(1\), \(f\)](#).) To encourage “continued participation in matters of public significance” and to ensure “that this participation should not be chilled through abuse of the judicial process,” the Legislature expressly provided that the anti-SLAPP statute “shall be construed broadly.” ([§ 425.16, subd. \(a\)](#).)

A special motion to strike involves a two-step process. First, the defendant must make a prima facie showing that the plaintiff’s “cause of action ... aris[es] from” an act by the defendant “in furtherance of the [defendant’s] right of petition or free speech ... in connection with a public issue.”² ([§ 425.16, subd. \(b\)\(1\)](#).) If a defendant meets this threshold showing, the cause of action shall be stricken unless the plaintiff can establish “a probability that the plaintiff will prevail on the claim.” (*Ibid.*)

In 2003, concerned about the “disturbing abuse” of the anti-SLAPP statute, the Legislature enacted [section 425.17](#) to exempt certain actions from it. *22 ([§ 425.17, subd. \(a\)](#).) We recently discussed the exemption for public interest lawsuits in *Club Members for an Honest Election v. Sierra Club* (2008) 45 Cal.4th 309, 86 Cal.Rptr.3d 288, 196 P.3d 1094, where we “narrowly construed” [section 425.17, subdivision \(b\)](#) and held that it applied “only when the entire action is brought in the public interest.” (*Club Members for an Honest Election, supra*, 45 Cal.4th at pp. 312, 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094.)

This case involves the scope and operation of the exemption for commercial speech under [section 425.17\(c\)](#), which

provides: “[Section 425.16](#) does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods or services, including, but not limited to, insurance, securities, or financial instruments, arising from any statement or conduct by that person if both of the following conditions exist: [¶] ***337 (1) The statement or conduct consists of representations of fact about that person’s or a business competitor’s business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person’s goods or services, or the statement or conduct was made in the course of delivering the person’s goods or services. [¶] (2) The intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or prospective buyer or customer, ...”

The commercial speech exemption, like the public interest exemption, “is a statutory exception to [section 425.16](#)” and “should be narrowly construed.” (*Club Members for an Honest Election v. Sierra Club, supra*, 45 Cal.4th at p. 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094; see also **1124 *Major v. Silna* (2005) 134 Cal.App.4th 1485, 1494, 36 Cal.Rptr.3d 875; accord, Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, pp. 7–8 [“before us for consideration in [Senate Bill] 515 is a measure that seeks to trim off a few bad branches as argued and identified by the [Consumer Attorneys of California]”].)

A. Which Party Bears the Burden to Establish the Applicability of the “Commercial Speech” Exemption Under Section 425.17(c)?

The Court of Appeal determined that Simpson, as the plaintiff, bore the burden of establishing that Gore’s advertisement fell within the commercial speech exemption to the anti-SLAPP law, relying on the general rule that “[o]ne claiming an exemption from a general statute has the burden of proving that he comes within the exemption.”³ Simpson argues that the burden should have been placed on Gore, as the defendant, to establish that the exemption does not apply. He relies in particular on our summary in *Equilon Enterprises v. Consumer Cause, Inc.* (2002) 29 Cal.4th 53, 67, 124 Cal.Rptr.2d 507, 52 P.3d 685 (*Equilon*), of the “two-step process” for *23 analyzing anti-SLAPP motions: “First, the court decides whether the *defendant* has made a threshold showing that the challenged cause of action is one arising from protected activity.... If the court finds such a showing has been made, it then determines whether the *plaintiff* has demonstrated a probability of prevailing on the

claim.” (Italics added.) We agree with the Court of Appeal's construction.

It is a “familiar” and “longstanding” legal principle that “ [w]hen a proviso ... carves an exception out of the body of a statute or contract those who set up such exception must prove it.” (*Meacham v. Knolls Atomic Power Laboratory* (2008) 554 U.S. 84, 128 S.Ct. 2395, 2400, 171 L.Ed.2d 283; see also *Trade Comm'n v. Morton Salt Co.* (1948) 334 U.S. 37, 44–45, 68 S.Ct. 822, 92 L.Ed. 1196 [“the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits ...”]; accord, 29 Am.Jur.2d (2008) Evidence § 176, p. 193.) Likewise, in California, “it has been declared that where the statute has exemptions, exceptions or matters which will avoid the statute the burden is on the claimant to show that he falls within that category.” (*Colonial Ins. Co. v. Ind. Acc. Com.* (1945) 27 Cal.2d 437, 441, 164 P.2d 490; see also *Briggs v. McCullough* (1869) 36 Cal. 542, 551–552; *In re Lorenzo C.* (1997) 54 Cal.App.4th 1330, 1345, 63 Cal.Rptr.2d 562 [“one who claims an exemption from a general statute has the burden of proving that he or she comes within the exemption”].)

***338 Simpson does not dispute that [section 425.16](#) sets forth a general statute or that [section 425.17](#) creates specified exemptions to it. Simpson contends, though, that the familiar and long-standing rule of statutory construction governing exemptions to a general statute was abrogated by the enactment in 1965 of [Evidence Code section 500](#), which provides: “Except as otherwise provided by law, a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting.”

Although it is true that [Evidence Code section 500](#) superseded former section 1981, which had provided that the burden of proof was on the party holding the affirmative of the issue, the change in wording did not upset the traditional rule of statutory construction. As the Law Revision Commission Comments to [Evidence Code section 500](#) explain, the phrase the “ ‘affirmative of the issue’ ” in former section 1981 had been criticized “as establishing a meaningless standard,” inasmuch as “ ‘practically any proposition may be stated in either affirmative or negative form.’ ” (Cal. Law Revision Com. com., reprinted at 29B *West's Ann. Evid.Code* (1995 ed.) foll. § 500, p. 554.) [Evidence Code section 500](#) was intended to make the allocation of the burden of proof “easier to ascertain” than the “classic formulation,” but *24

not to signal a sea change in the law. (*Conservatorship of Hume* (2006) 140 Cal.App.4th 1385, 1388, fn. 5, 44 Cal.Rptr.3d 906; see also *Los Angeles Unified School Dist. v. Workers' Comp. Appeals Bd.* (1984) 150 Cal.App.3d 823, 829, 198 Cal.Rptr. 116 [citing the two formulations together].) Tellingly, Simpson **1125 cites nothing to support its novel claim that [Evidence Code section 500](#) abrogated the ordinary rule of statutory construction. (Cf. 31 Cal.Jur.3d (2002) Evidence § 90, p. 151 [“What facts are essential to a particular party's claim for relief or defense is generally a matter to be determined by the substantive law, not the law of evidence; [Evid.Code, § 500](#) does not purport to determine which facts are ‘essential’ to the plaintiff's claim for relief and which facts are ‘essential’ to a claimed defense, but rather leaves those substantive determinations to be resolved in light of the particular cause of action or defense at issue,” (fns. omitted)].) Indeed, the Law Revision Commission Comments note that [Evidence Code section 500](#) “follows th[e] basic rule”—i.e., “ ‘that whatever facts a party must affirmatively plead he also has the burden of proving’ ”—and is even broader, in that it “ appl[ies] to issues not necessarily raised in the pleadings.” (Cal. Law Revision Com. com., reprinted at 29B *West's Ann. Evid.Code, supra*, foll. § 500, p. 554.) Inasmuch as Simpson concedes that “[t]he initial burden should be on the plaintiff to invoke the exemption in opposition to the anti-SLAPP motion,” it follows that the plaintiff also has the burden of proving the applicability of the exemption.

Furthermore, the “general principle” of [Evidence Code section 500](#) is “that a party who seeks a court's action in his favor bears the burden of persuasion thereon.” (*Aguilar v. Atlantic Richfield Co.* (2001) 25 Cal.4th 826, 850, 107 Cal.Rptr.2d 841, 24 P.3d 493.) Because establishing the commercial speech exemption is essential to Simpson's defense to the special motion to strike, [Evidence Code section 500](#) places the burden of proof on Simpson. (See generally *City of Lafayette v. East Bay Mun. Utility Dist.* (1993) 16 Cal.App.4th 1005, 1017, 20 Cal.Rptr.2d 658 [“ ‘One seeking to be excluded from the sweep of the general statute must establish that the exception applies’ ”].)

Nothing in *Equilon* or its discussion of the “two-step process” alters the analysis. (*Equilon, supra*, 29 Cal.4th at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In *Equilon*, ***339 we explained that the defendant has the burden to show that the cause of action being challenged under the anti-SLAPP statute is one arising from protected activity. (*Equilon, supra*, at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In discussing

the defendant's burden at the first stage, *Equilon* construed only [section 425.16](#), and did not purport to identify the party with the burden to establish the existence or nonexistence of the public interest exemption in [section 425.17, subdivision \(b\)](#), or the commercial speech exemption in [section 425.17\(c\)](#), inasmuch as *Equilon* predated the enactment of [section 425.17](#). It is worth noting, though, that *25 nothing in *Equilon* purported to abrogate the long-standing rule of construction that the party seeking to benefit from an exception to a general statute bears the burden to establish the exception.³

Simpson argues, correctly, that the ordinary rules governing allocation of the burden of proof may be disregarded for policy reasons in exceptional circumstances. (*Adams v. Murakami* (1991) 54 Cal.3d 105, 119–120, 284 Cal.Rptr. 318, 813 P.2d 1348; *Cassady v. Morgan, Lewis & Bockius LLP* (2006) 145 Cal.App.4th 220, 234, 51 Cal.Rptr.3d 527 (*Cassady*).) Yet such exceptions are “few, and narrow” (*Sargent Fletcher, Inc. v. Able Corp.* (2003) 110 Cal.App.4th 1658, 1670, 3 Cal.Rptr.3d 279), and the reasons justifying a shift in the normal allocation of the burden of proof must be “compelling.” **1126 (*Aydin Corp. v. First State Ins. Co.* (1998) 18 Cal.4th 1183, 1193, 77 Cal.Rptr.2d 537, 959 P.2d 1213; accord, *Meacham v. Knolls Atomic Power Lab., supra*, 554 U.S. at pp. 90–92, 128 S.Ct. at p. 2400.) Simpson fails to identify any compelling justification.

Simpson does assert that the facts underlying the commercial speech exemption are “peculiarly” within the speaker's knowledge. But Simpson does not explain how a plaintiff would be significantly disadvantaged in demonstrating that the statement or conduct underlying its cause of action “consists of representations of fact about [the defendant]'s or a business competitor's business operations, goods, or services”; that the defendant's statement or conduct was “made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” or “in the course of delivering the persons' goods or services”; or that the “intended audience” was “an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer.” (§ 425.17(c)(1), (2); see generally *Schaffer v. Weast* (2005) 546 U.S. 49, 60, 126 S.Ct. 528, 163 L.Ed.2d 387 [“ ‘Very often one must plead and prove matters as to which his adversary has superior access to the proof’ ”].) In sum, Simpson does not persuade us that [section 425.17\(c\)](#) presents ***340 one of those “ ‘rare occasions’ ” *26 justifying a deviation from

the normal allocation of the burden of proof. (*Cassady, supra*, 145 Cal.App.4th at p. 234, 51 Cal.Rptr.3d 527.)

The burden of proof as to the applicability of the commercial speech exemption, therefore, falls on the party seeking the benefit of it—i.e., the plaintiff.

B. Were Simpson's Causes of Action Exempted from the Anti-SLAPP Statute by Section 425.17(c)?

As noted, [section 425.17\(c\)](#) provides, in pertinent part: “[Section 425.16](#) does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods or services ... arising from any statement or conduct by that person if both of the following conditions exist: [¶] (1) The statement or conduct consists of representations of fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services, or the statement or conduct was made in the course of delivering the person's goods or services. [¶] (2) The intended audience is an actual buyer or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual buyer or customer....”

There are no disputed issues of fact here. We review the applicability of the commercial speech exemption independently. (*Soukup v. Law Offices of Herbert Hafif* (2006) 39 Cal.4th 260, 269, fn. 3, 46 Cal.Rptr.3d 638, 139 P.3d 30.)

The Court of Appeal held, and the parties' initial briefing assumed, that [section 425.17\(c\)\(1\)](#) prescribes a “content exemption” and a “delivery exemption” and that these exemptions have distinctly different elements. The content exemption shields a cause of action from the anti-SLAPP statute if the cause of action arises from a statement or conduct that “consists of representations of fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services.” (§ 425.17, subd. (c)(1).) The delivery exemption provides a similar shield for *any* statement or conduct “made in the course of delivering the person's goods or services.” (*Ibid.*) In other words, this approach divided the first 47 words of subdivision (c)(1) from the last 17 to create two independent and parallel theories of exemption from the anti-SLAPP law.

Although [section 425.17\(c\)\(1\)](#) is grammatically susceptible of such a construction, that construction was not necessarily the only plausible one. *27 Gore had observed, in a footnote in its initial briefing, that the statute might also be read to exempt a cause of action arising from a statement or conduct **1127 that consists of representations of fact about that person's or a competitor's business operations, goods, or services that was made *either* “for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” *or* “in the course of delivering the person's goods or services.” (§ 425.17(c)(1).) We granted the parties the opportunity to file supplemental briefing as to which construction was the correct one and, as will appear, agree with Gore's construction.

As in any case involving statutory interpretation, our fundamental task is to determine the Legislature's intent so as to effectuate the law's purpose. (***341 [People v. Lewis](#) (2008) 43 Cal.4th 415, 491, 75 Cal.Rptr.3d 588, 181 P.3d 947.) “We begin with the text of the statute as the best indicator of legislative intent” ([Tonya M. v. Superior Court](#) (2007) 42 Cal.4th 836, 844, 69 Cal.Rptr.3d 96, 172 P.3d 402), but we may reject a literal construction that is contrary to the legislative intent apparent in the statute or that would lead to absurd results. ([Ornelas v. Randolph](#) (1993) 4 Cal.4th 1095, 1105, 17 Cal.Rptr.2d 594, 847 P.2d 560.)

Simpson's argument, at least at the outset, relies on the plain language of [section 425.17\(c\)\(1\)](#) and the canon of construction of avoiding surplusage. According to Simpson, [section 425.17\(c\)\(1\)](#) creates two independent commercial speech exemptions, each introduced by the phrase “the statement or conduct,” and to hold otherwise would render the second iteration of “the statement or conduct” in the subdivision redundant. In Simpson's view, therefore, the delivery exemption encompasses a cause of action arising from “any statement or conduct made in the course of delivering the person's goods or services.” Gore argues that such a construction would contravene the legislative intent and lead to absurd results.

The Legislature's findings supporting the enactment of [section 425.17](#) are set forth in subdivision (a), which states that “there has been a disturbing abuse of [Section 425.16](#), the California Anti–SLAPP Law, which has undermined the exercise of the constitutional rights of freedom of speech and petition for the redress of grievances, contrary to the purpose and intent of [Section 425.16](#). The Legislature finds

and declares that it is in the public interest to encourage continued participation in matters of public significance, and that this participation should not be chilled through abuse of the judicial process or [Section 425.16](#).”

The construction favored by Simpson does not effectively fulfill the statute's purposes. Under that construction, the Legislature can be seen to have carefully devised specific requirements in order to exempt a cause of *28 action under the content prong—i.e., the statement or conduct underlying the cause of action must (1) consist of representations of fact (2) about that person's or a business competitor's business operations, goods, or services, and (3) have been made for the purpose of obtaining approval for, promoting, or securing transactions in the person's goods or services. Yet, under Simpson's construction of the delivery prong, the Legislature apparently imposed no particular requirements—i.e., a cause of action arising from *any* statement or conduct on *any* subject for *any* purpose is exempted from the anti-SLAPP statute, as long as it was made in the course of delivering goods or services. Simpson has not offered any rationale for why the stage of the transaction should play such a critical factor in determining whether to exempt a cause of action from the reach of the anti-SLAPP law.

Moreover, under Simpson's approach, a business that was sued because of political or religious statements made by an employee *in the course of delivering* the product or service to a customer would be deprived of the protection of the anti-SLAPP law, but that same business would be able to invoke the anti-SLAPP law if the same statements were made for the purpose of obtaining approval for, promoting, or securing transactions in its products. Neither the Legislature's findings nor common sense endorses or justifies such a result.

Simpson effectively concedes that such a result would be problematic, but argues that the statements in these hypotheticals “are *not a part of* the delivery of ***342 goods **1128 or services” and thus fall outside the delivery exemption as Simpson would interpret it. But, as we recently observed, “[d]uring’ means ‘at some point in the course of.’” ([People v. Lewis, supra](#), 43 Cal.4th at p. 514, 75 Cal.Rptr.3d 588, 181 P.3d 947.) Statements or conduct made *during* the delivery of goods or services thus would qualify as statements or conduct made *in the course of* delivering the goods or services. (Cf. [§ 425.17\(c\)\(1\)](#).)

Simpson attempts to narrow the definition of the delivery exemption by combining language that appears in two

different sentences in *Brill, supra*, 132 Cal.App.4th at page 341, 33 Cal.Rptr.3d 371, to argue that the exemption extends only to “ ‘statements ... made and conduct engaged in as part of ... the type of business transaction engaged in by defendants.’ ” But this formulation does not appear anywhere in the text of [section 425.17\(c\)\(1\)](#). If, as Simpson effectively concedes, the delivery prong requires an interpretive gloss to avoid absurd results, it seems more consonant with legislative intent to adopt the restriction the Legislature articulated earlier in the sentence setting forth the exemption rather than to rummage about elsewhere for new limitations arising out of whole cloth.

Moreover, Simpson's construction of the delivery prong would render the first part of [section 425.17\(c\)\(1\)](#)—the so-called “content and purpose” *29 prong—surplusage. Statements or conduct that are “ ‘part of ... the type of business transaction engaged in by defendants’ ” would necessarily encompass “representations of fact about that person's ... business operations, goods, or services, that [are] made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services” (§ 425.17(c)(1)) inasmuch as every business engages in efforts to obtain approval for, promote, or secure sales or transactions in its goods or services. Indeed, Simpson concedes that “a grocer's advertisement in advance of intended sales” falls within its broad definition of the delivery prong “to the extent the advertising informs the public about the availability of the product for delivery” or “to the extent the advertising keeps the product in the public eye and bolsters its prestige.” With such a broad definition of the delivery prong, there would be no need for the content and purpose prong.

The legislative history further undermines Simpson's interpretation of the statute. Summaries of the bill prepared for various legislative committees consistently stated that [section 425.17\(c\)](#) would prohibit “the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct consisting of representations of fact about their goods, services or business operations, or those of a competitor, when *those* statements or conduct were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, or in the course of delivering the person's goods or services, if the intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer, ...” (Legis. Analyst, 3d reading analysis of Sen. Bill

No. 515 (2003–2004 Reg. Sess.) as amended July 8, 2003, p. 1, italics added; Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 2, italics added; Assem. Republican Caucus, analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 1, italics added; see also Sen. Sheila Kuehl, letter to Governor Gray Davis, Sept. 3, 2003, p. 2.) In addition, an analysis prepared for the Senate Committee on the Judiciary noted that Senate Bill 515 was ***343 “consistent with the recommendation of the Senate Judiciary Committee analysis last year on [Senate Bill] 1651[,] which urged the sponsors to look at *the content and context* of the statement or conduct when crafting an exemption, rather than enacting a wholesale exclusion of a class of defendants[,] which had been proposed in [Senate Bill] 1651.” (Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, p. 9, italics added.) Simpson offers no explanation why the Legislature would have been so concerned about the content of the statement or conduct in the first part of [section 425.17\(c\)\(1\)](#) but would **1129 have abandoned any such concern in the remainder of the sentence.

*30 For these reasons, we interpret [section 425.17\(c\)](#) to exempt from the anti-SLAPP law a cause of action arising from commercial speech when (1) the cause of action is against a person primarily engaged in the business of selling or leasing goods or services; (2) the cause of action arises from a statement or conduct by that person consisting of representations of fact about that person's or a business competitor's business operations, goods, or services; (3) the statement or conduct was made either for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services or in the course of delivering the person's goods or services; and (4) the intended audience for the statement or conduct meets the definition set forth in [section 425.17\(c\)\(2\)](#).

Gore does not dispute that he is in the business of selling legal services, that Simpson's causes of action arise from Gore's advertisement, that the purpose of the advertisement was to promote Gore's legal services, or that the advertisement was addressed to a qualifying audience under [section 425.17, subdivision \(c\)\(2\)](#). The point of contention concerns whether the causes of action “aris[e] from ... representations of fact about [Gore's] ... business operations, goods, or services.” (§ 425.17(c)(1).) We find that they do not.

Simpson's complaint asserts claims for defamation, trade libel, false advertising, and unfair business practices. The

common theme among these causes of action is the allegation that the advertisement “communicates that Simpson’s galvanized screws are defective.” The complaint alleges in particular that the advertisement “is libelous on its face in that it falsely communicates to the reader that Simpson’s products are defective”; that the advertisement “disparaged Simpson’s goods in that the Advertisement falsely communicates to the reader that Simpson’s galvanized screws are defective”; that these assertions in the advertisement “are false and misleading”; and that using “the false and misleading Advertisement to recruit potential plaintiffs to participate in an unjustified class action lawsuit against Simpson” was an unfair business practice.

We will assume arguendo that the advertisement implies that Simpson’s galvanized screws are defective. As the Court of Appeal recognized, however, even an implication that Simpson’s screws are defective “is not ‘about’ Gore’s or a competitor’s ‘business operations, goods, or services....’” (§ 425.17(c)(1).) It is, rather, a statement ‘about’ *Simpson*—or, more precisely, Simpson’s products.” It therefore falls squarely outside [section 425.17\(c\)](#)’s exemption for commercial speech.

Simpson contends that the advertisement does nonetheless satisfy the commercial speech exemption in that it “expressly states that ‘an attorney’ will ‘investigate whether you have a potential claim’” and that it also *31 supports the inference “that Gore has investigated the named companies and has discovered that they are selling ***344 defective screws.” Both of these statements are “about” Gore’s business operations, but neither satisfies the elements of the commercial speech exemption to the anti-SLAPP law.

Simpson’s causes of action plainly do not “arise from” (§ 425.17(c)) the representation that an attorney will investigate “whether you have a potential claim.” Simpson’s complaint does not allege that this statement is false or even that it is defamatory. In addition, a promise of what an attorney will do if the reader were to respond to the advertisement “is not a representation of fact, but an agreement to take certain actions in the future.” (*Navarro v. IHOP Properties, Inc.* (2005) 134 Cal.App.4th 834, 841, 36 Cal.Rptr.3d 385.) Consequently, it does not constitute “representations of fact about that person’s ... business operations, goods, or services.” (§ 425.17(c)(1).)

The alleged inference that Gore has investigated Simpson and discovered that the galvanized screws are defective is

not obvious from the advertisement itself, which asserts only that users of these fasteners “may” have certain (but unspecified) legal rights and that an attorney would need to “investigate whether you have a potential claim.” Even if **1130 one were to draw this inference, however, it would be no more than an attempt to layer the allegedly defamatory inference itself—i.e., that Simpson’s galvanized screws are defective—with an alleged inference that Gore had *discovered* the defect. Simpson cites no authority for expanding the scope of the commercial speech exemption in this manner. (Cf. *Stewart v. Rolling Stone LLC* (2010) 181 Cal.App.4th 664, 676, 105 Cal.Rptr.3d 98 [the commercial speech exemption did not apply to a claim that the defendant magazine wrongfully used plaintiffs’ names for a Camel advertisement; “as plaintiffs concede, the goods they sell are copies of Rolling Stone magazine, not Camel cigarettes. More significantly, the statement or conduct at issue here did not consist of ‘representations of fact about the business operations, goods, or services’ of Rolling Stone or of any of defendants’ business competitors. Instead, the representation at the center of this lawsuit is the representation that plaintiffs and their fellow musicians endorse the sale and use of Camel cigarettes”]; accord, *New.Net v. Lavasoft* (C.D.Cal.2004) 356 F.Supp.2d 1090, 1104 [the commercial speech exemption did not apply because “the purportedly offending statements are not statements made about Defendant’s product, but rather statements about Plaintiff and its products” and the two were not competitors]; see also *Troy Group, Inc. v. Tilson* (C.D.Cal.2005) 364 F.Supp.2d 1149, 1151, 1155 [defendant investment adviser’s e-mail asking whether plaintiff corporation is one of “the biggest crooks on the planet or what?” is “clearly not about [defendant]’s business, rather it is about [plaintiff], which, as [plaintiffs] admit, is not a business competitor of [defendant]”].) We are reluctant to allow plaintiffs to evade the limitations of the statutory *32 text by mere wordplay, especially given our obligation to construe the commercial speech exemption narrowly.

Moreover, Simpson has not attempted to recover damages here because of any implied representation that Gore allegedly *discovered* that Simpson’s products were defective, but because Gore allegedly *implied* that they were defective. Whether the Simpson products are in fact defective is beyond the scope of this proceeding, but the inference that they are defective is not a representation of fact about *Gore*’s business operations, goods, or services. The Court of Appeal stated the issue succinctly: “To the extent that Gore’s advertisement ‘consists of’ representations about his services, Simpson’s action does not ‘aris[e] ***345 from’ it; to the extent that

Simpson's action 'aris[es] from' a representation by Gore, the representation was not 'about' Gore's or a competitor's services or business operations."⁴

Simpson argues next that the commercial speech exemption from dismissal under the anti-SLAPP statute should not require that the statement itself giving rise to the cause of action include factual representations about the defendant's or a business competitor's business operations, goods, or services, as long as the statement giving rise to the cause of action is *accompanied* by factual representations about the defendant's or a business competitor's business operations, goods, or services. The statute's plain language, however, is otherwise. The commercial speech exemption applies only to a cause of action "arising from" a statement (or conduct) that "consists of representations of fact about that person's or a business competitor's business operations, goods, or services...." (§ 425.17(c)(1).)

Simpson complains, with rhetorical flourish, that the advertisement "defam[es] Simpson in order to tout Gore and his services.... The tout and the defamation were of an inseparable whole, with the defamation serving as bait for the tout. The Court of Appeal's approach is as if to parse cheese from a mousetrap." But this is merely another way of saying that the speaker made a representation of fact about a *noncompetitor's* goods for the purpose of promoting the speaker's own services. Had the Legislature intended the commercial speech exemption to encompass representations of fact about *any* ***1131 business operations, goods, or services made for the purpose of promoting sales, leases, or transactions in the speaker's own goods or services, then it would not have limited the exemption to statements or conduct consisting of "representations of fact about *that person's or a business competitor's* business operations, goods, or services" (§ 425.17(c)(1); see *33 *Mendoza v. ADP Screening and Selection Services, Inc.* (2010) 182 Cal.App.4th 1644, 1652, 107 Cal.Rptr.3d 294 ["the Legislature appears to have enacted section 425.17, subdivision (c), for the purpose of exempting from the reach of the anti-SLAPP statute cases involving comparative advertising by businesses."].)

The legislative history accords with the statute's plain language. As stated earlier, committee reports summarized the bill as "[p]rohibit[ing] the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct *consisting of* representations of fact about their goods, services or business operations, or those of

a competitor, *when those statements ... were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, or in the course of delivering the person's goods or services....*" (Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 3, italics added.) The plain language and the legislative history each confirm that the statement or conduct giving rise to the cause of action must consist of factual representations about the speaker's (or a competitor's) goods, services, or business operations. Nothing in the plain language or the legislative history suggests it would be enough to protect against dismissal under the anti-SLAPP statute if the factual representations about the speaker's or a competitor's business simply appeared in the ***346 same publication as the statements actually giving rise to the cause of action.⁵

Indeed, Simpson's proposed construction would seriously undermine the anti-SLAPP statute itself. As Gore points out, a press release critical of a political candidate—i.e., core political speech—would lose the protection of the anti-SLAPP statute if the press release *also* mentioned the products sold by the business. We therefore reject Simpson's expansive construction of the commercial speech exemption and conclude, in accordance with the trial court and the Court of Appeal, that Simpson's complaint was not exempted from the anti-SLAPP statute by section 425.17(c)(1).

The trial court went on to consider Gore's special motion to strike the complaint under section 425.16, determined that Simpson had failed to establish a probability of prevailing on the merits, and granted the special motion to strike. The Court of Appeal affirmed. The correctness of those rulings is beyond the scope of our grant of review, which was limited to the *34 applicability of the commercial speech exemption to the anti-SLAPP statute set forth in section 425.17(c)(1).

DISPOSITION

The judgment of the Court of Appeal is affirmed.

WE CONCUR: GEORGE, C.J., KENNARD, WERDEGAR, CHIN, MORENO, and CORRIGAN, JJ.

All Citations

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Footnotes

- [1](#) SLAPP is an acronym for “strategic lawsuit against public participation.” ([Jarrow Formulas, Inc. v. LaMarche \(2003\) 31 Cal.4th 728, 732, fn. 1, 3 Cal.Rptr.3d 636, 74 P.3d 737.](#)) All further statutory references are to the Code of Civil Procedure unless otherwise indicated.
- [2](#) See [Leoni v. State Bar \(1985\) 39 Cal.3d 609, 624, 217 Cal.Rptr. 423, 704 P.2d 183](#) (lawyer advertising is protected by the First Amendment).
- [3](#) As Simpson points out, *Brill* did place the burden on the defendant. But *Brill* analyzed only whether the applicability of the commercial speech exception was part of *Equilon's* first step, where the court decides whether the defendant has made a threshold showing the challenged cause of action arises from protected activity, or part of *Equilon's* second step, where the court determines whether the plaintiff has demonstrated a probability of prevailing on the claim. ([Brill, supra, 132 Cal.App.4th at pp. 329–331, 33 Cal.Rptr.3d 371.](#)) *Brill's* conclusion that the defendant had the burden of proof to establish the nonapplicability of the commercial speech exception was based solely on its classification of the issue as a first-step determination and did not at all consider [section 425.17's](#) status as an exception to [section 425.16](#) or any canons of construction. ([Brill, supra, at p. 331, 33 Cal.Rptr.3d 371.](#)) [Brill Media Co., LLC v. TCW Group, Inc., supra, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371,](#) is therefore disapproved to the extent it is inconsistent with our holding here.
- [4](#) One can conceive of a cause of action arising from a representation of fact about the attorney's own services—such as a false claim that the attorney had already recovered a judgment against the manufacturer for the defective product—but the advertisement in this case did not contain such a representation.
- [5](#) Simpson complains that a party should not be able to defeat the commercial speech exception to the anti-SLAPP statute by parsing a two-sentence advertisement into its component parts. We agree. The proper test does not turn on the punctuation used in the advertisement, but on the basis for the cause of action. Here, the causes of action all arise from the inference that Simpson's products are defective, an inference that Simpson alleges is implied from the text of the advertisement. This inference, though, contains no representations of fact about *Gore's* business operations, goods, or services.

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On June 18, 2024, I served the:

- **Current Mailing List dated June 17, 2024**
- **Notice of Complete Test Claim, Schedule for Comments, and Notice of Tentative Hearing Date issued June 18, 2024**
- **Test Claim filed by Union City on June 30, 2023**

*California Regional Water Quality Control Board, San Francisco Bay Region,
Order No. R2-2022-0018, 22-TC-07*

California Regional Water Quality Control Board, San Francisco Bay Region,
Order No. R2-2022-018, as modified by Order No. R2-2023-0019; NPDES
Permit No. CAS612008; Provisions C.3.b.ii(4), C.3.b.ii(5), C.3.j.ii(1)(a)-(g),
C.3.j.ii(4), C.3.j.ii(2)(a)-(j), C.5.f, C.8.d, C.8.e, C.8.f, C.10.a.i, C.10.a.ii, C.10.e,
C.11.c, C.12.a, C.12.c, C.15.b.iii, C.17.a, C.20.b, C.21.b, issued May 11, 2022,
effective July 1, 2022

Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on June 18, 2024 at Sacramento, California.



Jill Magee
Commission on State Mandates
980 Ninth Street, Suite 300
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COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 6/17/24

Claim Number: 22-TC-07

Matter: California Regional Water Quality Control Board, San Francisco Bay Region,
Order No. R2-2022-0018

Claimant: Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

Each commission mailing list is continuously updated as requests are received to include or remove any party or person on the mailing list. A current mailing list is provided with commission correspondence, and a copy of the current mailing list is available upon request at any time. Except as provided otherwise by commission rule, when a party or interested party files any written material with the commission concerning a claim, it shall simultaneously serve a copy of the written material on the parties and interested parties to the claim identified on the mailing list provided by the commission. (Cal. Code Regs., tit. 2, § 1181.3.)

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